

**OPINIONS AND DECLARATIONS  
RENDERED BY THE INTER-  
NATIONAL COMMISSION ON  
ZOOLOGICAL NOMENCLATURE**

*Edited by*

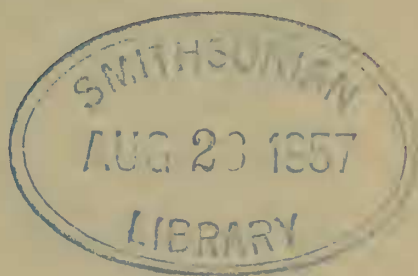
**FRANCIS HEMMING, C.M.G., C.B.E.**

Secretary to the Commission

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**OPINION 472**

Addition to the *Official List of Generic Names in Zoology*  
of the generic name *Pagurus* Fabricius, 1775, with *Cancer*  
*bernhardus* Linnaeus, 1758, as type species (Class  
Crustacea, Order Decapoda)



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## OPINION 472

ADDITION TO THE "OFFICIAL LIST OF GENERIC NAMES IN ZOOLOGY" OF THE GENERIC NAME "PAGURUS" FABRICIUS, 1775, WITH "CANCER BERNHARDUS" LINNAEUS, 1758, AS TYPE SPECIES (CLASS CRUSTACEA, ORDER DECAPODA)

**RULING :—**(1) The request for the suppression under the Plenary Powers of the generic name *Pagurus* Fabricius, 1775 (Class Crustacea, Order Decapoda) is hereby rejected.

(2) It is hereby directed that the nominal species *Cancer bernhardus* Linnaeus, 1758, be interpreted by the lectotype designated by Forest (J.) & Holthuis (L.B.) in December 1955 (*Bull. zool. Nomencl.* **11** : 312, paragraph 13)<sup>1</sup>, namely, the specimen figured by Swammerdam in 1737 as fig. 1 on pl. XI of the work by that author entitled *Bybel der Natuure*.

(3) The under-mentioned generic names are hereby placed on the *Official List of Generic Names in Zoology* with the Name Numbers severally specified below :—

(a) *Pagurus* Fabricius, 1775 (gender : masculine) (type species, by selection by Latreille (1810) : *Cancer*

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<sup>1</sup> The lectotype selection here referred to was made by Forest and Holthuis in the application submitted in the present case. The paper in question is reprinted in the first paragraph of the present *Opinion*.

*bernhardus* Linnaeus, 1758, interpreted as directed in (2) above) (Name No. 1190) ;

(b) *Dardanus* Paulson, 1875 (gender : masculine) (type species, by monotypy : *Dardanus hellerii* Paulson, 1875) (Name No. 1191) ;

(c) *Diogenes* Dana, 1851 (gender : masculine) (type species, by selection by Dana (1852) : *Pagurus miles* Fabricius, 1787) (Name No. 1192).

(4) The under-mentioned specific names are hereby placed on the *Official List of Specific Names in Zoology* with the Name Numbers severally specified below :—

(a) *bernhardus* Linnaeus, 1758, as published in the combination *Cancer bernhardus*, interpreted as directed in (2) above (specific name of type species of *Pagurus* Fabricius, 1775) (Name No. 1294) ;

(b) *miles* Fabricius, 1787, as published in the combination *Pagurus miles* (specific name of type species of *Diogenes* Dana, 1851) (Name No. 1295) ;

(c) *sanguinolentus* Quoy & Gaimard, 1825, as published in the combination *Pagurus sanguinolentus* (Name No. 1296) ;

(d) *megistos* Herbst, 1804, as published in the combination *Cancer megistos* (Name No. 1297).

(5) The under-mentioned generic names are hereby placed on the *Official Index of Rejected and Invalid Generic Names in Zoology* with the Name Numbers severally specified below :—

(a) *Eupagurus* Brandt, 1851 (a junior objective synonym of *Pagurus* Fabricius, 1775) (Name No. 931) ;

- (b) *Bernhardus* Dana, 1851 (a junior objective synonym of *Pagurus* Fabricius, 1775) (Name No. 932) ;
- (c) *Pagurus* Berthold, 1827 (a *nomen nudum*) (Name No. 933) ;
- (d) *Latro* Billberg, 1820 (a junior objective synonym of *Pagurus* Fabricius, 1775, through the selection by Forest (J.) & Holthuis (L.B.) of *Cancer bernhardus* Linnaeus, 1758, as type species in the paper reproduced in paragraph 15 of the present *Opinion*) (Name No. 934).

(6) The under-mentioned family-group names are hereby placed on the *Official List of Family-Group Names in Zoology* with the Name Numbers severally specified below :—

- (a) PAGURIDAE (correction by Samouelle (1819) of PAGURII) Latreille, [1802-1803] (type genus : *Pagurus* Fabricius, 1775) (Name No. 178) ;
- (b) DIOGENINAE Ortmann, 1892 (type genus : *Diogenes* Dana, 1851) (Name No. 179).

(7) The under-mentioned family-group names are hereby placed on the *Official Index of Rejected and Invalid Family-Group Names in Zoology* with the Name Numbers severally specified below :—

- (a) EUPAGURINAE Ortmann, 1892 (type genus : *Eupagurus* Brandt, 1851) (invalid, because the type genus has as its type species the same species as that which is the type species of *Pagurus* Fabricius, 1775, the type genus of the older nominal family-group taxon PAGURIDAE (correction of PAGURII) Latreille, [1802-1803]) (Name No. 210) ;

- (b) PAGURII Latreille, [1802-1803] (type genus : *Pagurus* Fabricius, 1775) (an Invalid Original Spelling for PAGURIDAE) (Name No. 211) ;
- (c) PAGURISTINEN Boas, 1924 (type genus : *Paguristes* Dana, 1851) (invalid, because a vernacular (German) word and not a Latin or Latinised word) (Name No. 212).

## I. THE STATEMENT OF THE CASE

On 27th August 1954, Dr. L. B. Holthuis (*Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands*) addressed a letter to the Office of the Commission covering the preliminary text of an application to the International Commission on Zoological Nomenclature regarding the generic name *Pagurus* Fabricius, 1775 (Class Crustacea, Order Decapoda) prepared jointly by M. J. Forest (*Muséum National d'Histoire Naturelle, Paris*) and himself. The applicants explained that, although they were not agreed as to the nature of the solution required in this case, they were both of the opinion that a final settlement of the problem associated with the foregoing generic name was urgently required in order to put an end to the existing diversity of practice in regard to its usage. M. Forest and Dr. Holthuis had accordingly decided to join together in the submission to the Commission of an application consisting of a joint statement of the factual background relating to this generic name, followed by separate statements setting out the solutions of that problem advocated by M. Forest and Dr. Holthuis respectively. Correspondence ensued between the Secretary and Dr. Holthuis and M. Forest in regard to certain aspects of this case, notably those connected with the family-group-name problems involved, a subject which had not been dealt with in the application as originally submitted. These consultations were concluded by 18th August 1955, on

which date the following definitive application was submitted to the International Commission :—

**Application for a decision regarding the status of the generic name  
“Pagurus” Fabricius, 1775 (Class Crustacea, Order Decapoda)  
and application for the use of the Plenary Powers in regard  
thereto in certain circumstances**

by

**J. FOREST**

*(Muséum National d'Histoire Naturelle, Paris, France)*

and

**L. B. HOLTHUIS**

*(Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands)*

**Part I (by J. Forest and L. B. Holthuis)**

The form in which this proposal is presented is rather unusual, since it is submitted by two applicants, who advocate different solutions for the problem discussed in it. This is the reason why the present paper is divided in three parts. In the first part, submitted jointly by the two authors, the nomenclatorial status of the generic name *Pagurus* Fabricius, 1775, and the problem connected with it, are discussed. The second part is written by the first author (Forest) and gives his views on this problem and his proposals for its solution. The third part, finally, contains the viewpoint of the second author (Holthuis) and the proposals submitted by him. It is the hope of the applicants that the Commission, after due consideration of the two viewpoints, legalize one of them by accepting the proposals of the author supporting it. The problem, now, is the following :

2. The generic name *Pagurus* Fabricius, 1775, is used by all carcinologists and is the best known of the names given to the genera of hermit crabs ; it is the name of the type genus of the subfamily PAGURINAE, of the family PAGURIDAE, and of the section PAGURIDEA ; the latter containing all species of hermit crabs that are known at present. It is, therefore, the more regrettable that no uniformity exists among carcinologists in the use of this name : it being currently applied by different carcinologists to two widely different genera. The object of the present application is to bring this question before the International Commission on Zoological Nomenclature in order to end the highly undesirable state of confusion that exists at present in the literature dealing with this group of Crustacea.

3. The following are the original references to the generic names dealt with in the present application :—

*Bernhardus* Dana, 1851 (November-December), *Proc. Acad. nat. Sci. Philad.* 5(11) : 267 (gender : masculine) (type species, by original designation : *Cancer bernhardus* Linnaeus, 1758, *Syst. Nat.* (ed. 10) 1 : 631).

*Dardanus* Paulson, 1875, *Issljed. Rakoobr. Krasn. Morja* (Stud. Crust. Red Sea) : 90 (gender : masculine) (type species, by monotypy : *Dardanus hellerii* Paulson, 1875, *Issljed. Rakoobr. Krasn. Morja* (Stud. Crust. Red Sea) : 90 (which is a junior subjective synonym of *Pagurus sanguinolentus* Quoy & Gaimard, 1825, Freycinet's *Voy. autour Monde Uranie & Physicienne* (Zool.) : 532).

*Diogenes* Dana, 1851, *Proc. Acad. nat. Sci. Philad.* 5(11) : 268 (gender : masculine) (type species, by selection by Dana, 1852 (*Amer. J. Sci. Arts* (2) 13(37) : 122) : *Pagurus miles* Fabricius, 1787, *Mant. Ins.* 1 : 327).

*Eupagurus* Brandt, 1851 (September 30), Middendorff's *Reise N. u. O. Sibiriens* 2 (Zool. 1) : 105 (gender : masculine) (type species, by selection by Stimpson, 1858 (*Proc. Acad. nat. Sci. Philad.* 1858 : 74) : *Cancer bernhardus* Linnaeus, 1758, *Syst. Nat.* (ed. 10) 1 : 631).

*Pagurus* Fabricius, 1775, *Syst. Ent.* : 410 (gender : masculine) (type species, by selection by Latreille, 1810 (*Consid. gén. Anim. Crust. Arachn. Ins.* : 422) : *Cancer bernhardus* Linnaeus, 1758, *Syst. Nat.* (ed. 10) 1 : 631).

*Pagurus* Berthold, 1827, in Latreille, *Nat. Fam. Thierr.* : 255 (a *nomen nudum*).

4. Like in so many controversies concerning carcinological nomenclature the origin of all the trouble lies in the fact that the carcinologists are divided into two groups, each of which considers a different species as the type species of the genus concerned. In the present case, one of these two groups, which we for reasons of convenience will name "Group I", is of the opinion that *Cancer bernhardus* Linnaeus, 1758, is the type species of the genus *Pagurus* Fabricius, 1775, while "Group II" indicates as the type species of that genus *Pagurus punctulatus* Olivier (1811, *Encycl. méthod. Hist. nat.* 8 : 641) (= *Cancer megistos* Herbst, 1804, *Vers. Naturgesch. Krabben Krebse* 3(4) : 23). There can be little doubt that Group I is right. *Cancer bernhardus* is the second of the thirteen species originally included by Fabricius (1775) in his new genus *Pagurus*, and it was selected as the type of that genus by Latreille (1810). *Pagurus punctulatus*, on the other hand, does not figure among the species originally included in the genus *Pagurus*, while furthermore not a single one of the species placed by Fabricius (1775) in that genus, at present is considered to be congeneric with *Pagurus punctulatus* Olivier. Dana's (1852, *Proc. Acad. nat. Sci.*



*Philad.* 6(1) : 6) selection of *Pagurus punctulatus* Olivier as the type species of the genus *Pagurus* thus is invalid for two reasons. First, Dana's type selection is not the first, it having been made 42 years after Latreille's (1810) selection, and, second, the species selected by Dana is not one of the species originally included in the genus.

5. Dana was followed in this error by the majority of carcinologists till 1896, when Benedict (*Ann. Mag. nat. Hist.* (6) 18 : 99, footnote) pointed out that *Cancer bernhardus* Linnaeus, actually is the type species of the genus *Pagurus*. Since that time a large number of authors has followed Benedict, but a considerable number continued to use the incorrect nomenclature.

6. To make matters even worse, the two genera discussed here, are the type genera of the two subfamilies that together form the family PAGURIDAE. Authors belonging to Group I use the names PAGURINAE and DARDANINAE (or PAGURISTINAE or DIOGENINAE) to indicate these subfamilies, while those of Group II employ the names EUPAGURINAE and PAGURINAE respectively. It will be obvious to anyone that this state of affairs in which different authors use each of the names *Pagurus* and PAGURINAE for two widely different taxa is intolerable, and it is hoped that a decision by the International Commission on Zoological Nomenclature will bring this confusion to an end.

7. There are three possible solutions to this problem. In the following table the names for the two genera (indicated as Genus A and Genus B respectively), which under each of these solutions (indicated as Solutions I, II, and III respectively) would be the legal names, are indicated, together with the names of their respective type species :—

	Solution I	Solution II	Solution III
Genus A	<i>Pagurus</i> Fabricius, 1775 Type species : <i>Cancer bernhardus</i> Linnaeus, 1758.	<i>Eupagurus</i> Brandt, 1851 Type species : <i>Cancer bernhardus</i> Linnaeus, 1758.	<i>Eupagurus</i> Brandt, 1851 Type species : <i>Cancer bernhardus</i> Linnaeus, 1758.
Genus B	<i>Dardanus</i> Paulson, 1875 Type species : <i>Dardanus hellerii</i> Paulson, 1875.	<i>Pagurus</i> Fabricius, 1775 Type species : <i>Pagurus punctulatus</i> Olivier, 1811.	<i>Dardanus</i> Paulson, 1875 Type species : <i>Dardanus hellerii</i> Paulson, 1875.

8. Solution I is attained by a strict application of the International Rules of Zoological Nomenclature. The use of the Plenary Powers is not involved under this solution. The support for this solution comes from the members of Group I, who already are employing the names which under this Solution are correct. Group I includes all American and Soviet carcinologists (with the exception of the American author Lee Boone). The names *Pagurus* and *Dardanus* are being used for the genera A and B respectively in both the scientific and non-scientific literature of the American countries and the U.S.S.R. These names also are used by the Hawaiian and Australian carcinologists. Furthermore these names are used by a few zoologists in western Europe: the Spanish carcinologist Dr. R. Zariquiey Alvarez and two Dutch workers in the group (the late Miss Alida M. Buitendijk, who worked extensively on Indo-West Pacific PAGURIDAE, and the second author of the present proposal).

9. Solution II is the one supported by the group of authors indicated here as Group II. To attain this solution the Plenary Powers of the Commission have to be used to designate *Pagurus punctulatus* Olivier, 1811, as the type species of the genus *Pagurus* Fabricius, at the same time suppressing all previous type selections for that genus. Group II includes practically all French, British, German, and Scandinavian carcinologists. Also the carcinologists from South Africa, India, Japan, and New Zealand belong here. In the non-scientific literature of Western Europe the names *Eupagurus* and *Pagurus* are commonly used for genus A and B respectively.

10. Solution III can be attained by the suppression of the ambiguous generic name *Pagurus* Fabricius under the Plenary Powers of the International Commission on Zoological Nomenclature, by which action the generic names *Eupagurus* Brandt and *Dardanus* Paulson, about the identity of which no ambiguity exists, would become available names. This solution has been adopted by two French carcinologists: Professor Th. Monod, and the first author of the present paper.

11. The present authors hope that in the foregoing paragraphs they have given a sufficiently clear picture of the present awkward situation of the generic name *Pagurus* Fabricius. There is one more problem, however, that needs to be solved before a final action with regard to this generic name can be taken. This problem concerns the identity of *Cancer bernhardus* Linnaeus, 1758, the type species of the genera *Pagurus* Fabricius and *Eupagurus* Brandt. Linnaeus's (1758) original definition of *Cancer bernhardus* does not fit for the species which at present currently is indicated with the name *Pagurus* (or *Eupagurus*)

*bernhardus* (Linnaeus). Linnaeus's description namely runs as follows :

“ C[ancer]. macrourus parasiticus, chelis cordatis laevibus : sinistra majore.

*Matth. diosc.* 230.

*Aldr. exsangu.* 218.

*Rond. pisc.* 1. p. 553.

*Jonst. exsangu. t.* 7. f. 6—12.

*Bellon. aquat.* 362.

*Swammerd. bibl. t.* 11. f. 1, 2.

*Gesn. aquat.* 161.

*Habitat in Oceano Europaeo, intra varias testas Concharum.*

*Chelae margine anteriore versus basin barbatae.”*

12. In the species which is at present generally known as *Pagurus bernhardus* the two chelae are roughened by tubercles, and the right chela always is larger than the left. For this species the definition given by Linnaeus (1767, *Syst. Nat.* (ed. 12) 1 : 1049) for *Cancer bernhardus* fits far better : “ C[ancer]. macrourus parasiticus, chelis cordatis muricatis : dextra majore.” All subsequent authors, like Fabricius (1775) in the original description of the genus *Pagurus*, ignore Linnaeus's 1758 description of *Cancer bernhardus* and use the specific name *bernhardus* in the sense adopted by Linnaeus in 1767.

13. Linnaeus's (1758) definition is based either on *Diogenes pugilator* (Roux, 1829) or on *Paguristes oculatus* (Fabricius, 1775). Many of the descriptions and figures of hermit crabs given by the authors cited by Linnaeus (1758) in the original description of *Cancer bernhardus*, are not recognisable, but a few can be identified with known species. The figures given by Matthioli, Rondelet, Bellonius, Gesner, Aldrovandus, and Jonston are either so crude as to make identification impossible or show a species with the left chela larger than the right. This species, presumably *Diogenes pugilator*, is figured by Matthioli, Rondelet, Gesner, and Jonston ; the figures given by the last two authors being no more than copies of that given by Rondelet. The species described and figured by Swammerdam, however, can be identified without the least doubt as being identical with the species currently known as *Pagurus* (or *Eupagurus*) *bernhardus*. *Cancer bernhardus* Linnaeus, 1758, thus is a composite species, Linnaeus having confounded under that name at least two species : *Pagurus bernhardus*, and *Diogenes pugilator*, and/or *Paguristes oculatus*. In normal circumstances it would be logical to choose as the lectotype of *Cancer bernhardus* a specimen that agrees with Linnaeus's original definition. In the present case, however, such a selection would mean that *Pagurus bernhardus* would become synonymous with either *Diogenes pugilator* or with *Paguristes oculatus*, so that the well known generic name *Pagurus* and the equally well known specific name *bernhardus* would have to be transferred to a genus and a species for

which they have practically never been used. This transfer of names would cause such enormous confusion that no well-thinking carcinologist would ever attempt to introduce it. The only sensible solution is therefore to select as the lectotype of *Cancer bernhardus* the specimen figured by Swammerdam (1737, *Bybel der Natuure* : pl. 11, fig. 1), even if this specimen does not agree with Linnaeus's original definition of the species. We accordingly here select the above specimen to be the lectotype of this species.

14. Swammerdam received his material from fishermen living in the Dutch coastal village of Scheveningen near The Hague, who saved for him any curious animal that they got in their nets. It is known that around 1700 the Scheveningen fishermen went out in their flat-bottomed ships and fished in the southern North Sea (from the Dogger Bank southwards), generally staying rather close to the Dutch coast. Swammerdam's specimens therefore certainly came from the southern North Sea, a locality which we now may indicate as the restricted type locality of *Cancer bernhardus* Linnaeus, the actual type locality being "in Oceano Europaeo". We do not know what became of the specimen of *Pagurus bernhardus* after Swammerdam described and figured it. He may have discarded it or placed it in his collection. When Swammerdam died on February 17, 1680, he had the intention to sell his collection but had not yet done so (see Engel, 1938, *Bijdr. Dierk.* 27 : 320). It is not known what happened to the collection after Swammerdam's death, and we must consider his specimens as either destroyed or lost.

15. The name for the subfamily containing Genus B shows the following synonymy :—

PAGURINAE (correction by Samouelle (1819, *Entomol. useful Comp.* : 91) of PAGURII) Latreille, 1802—1803, *Hist. nat. Crust. Ins.* 3 : 29 (type genus *Pagurus* Fabricius, 1775). (Ortmann, 1892 (*Zool. Jb. Syst.* 6 : 269, 275) was the first author to use the subfamily name PAGURINAE in the sense adopted by workers belonging to Group II.)

DIOGENINAE Ortmann, 1892, *Zool. Jb. Syst.* 6 : 270, 294 (type genus : *Diogenes* Dana, 1851)

DARDANINAE Schmitt, 1926, *Bull. Amer. Mus. nat. Hist.* 53 : 45 (type genus : *Dardanus* Paulson, 1875)

PAGURISTINAE Makarov, 1938, *Faune URSS* 10(3) : 157 (type genus : *Paguristes* Dana, 1851, *Proc. Acad. nat. Sci. Philad.* 5 : 268, 269, 271). (This name was first published in the invalid vernacular (German) form as PAGURISTINEN by Boas in 1924 (*Biol. Meddel. K. Dansk Videns. Selsk. Kjøbenhavn* 4(4) : 30.)

16. Authors of Group II use the name PAGURINAE for the foregoing subfamily. Under the Rules authors belonging to Group I should use

for this subfamily the name *DIOGENINAE*, that being the oldest available name. This name has, however, hardly been used at all in modern carcinological literature, and it is desirable that the Commission should use its Plenary Powers to direct that the name *DIOGENINAE* Ortmann is not to be used in preference to the name *DARDANINAE* Dana, notwithstanding its priority over that name. This course is necessary, partly because the general introduction of the name *DIOGENINAE* Ortmann at the subfamily level would do violence to established practice and partly because the genus *Diogenes* Dana is most unsuitable for adoption as the type genus of a family-group taxon, as its species present certain aberrant characters not shared by the remainder of the group.

17. The subfamily containing Genus A is called *PAGURINAE* by authors of Group I. By authors of Group II it is known as *EUPAGURINAE* Ortmann, 1892 (*Zool. Jb. Syst.* 6 : 270, 296 (type genus : *Eupagurus*, Brandt, 1851)). So far as is known to us, there are no junior synonyms of the name *EUPAGURINAE*.

## Part II. Discussion and proposals by J. Forest

18. The selection of the specimen figured by Swammerdam as the lectotype of *Cancer bernhardus* Linnaeus, the only practical way of remedying the antinomy existing between the definitions given by Linnaeus in 1758 and in 1767, involves, under a strict observance of the Rules the attribution of the name *Pagurus* Fabricius to Genus A, in conformity with Latreille's 1810 selection of *Pagurus bernhardus* as the type species of this genus.

19. In the present case, however, such a strict application of the Rules would, it seems to me, let the confusion in the Paguridean nomenclature continue. We may assume that in the future some carcinologists will again use the name *Pagurus* for Genus B, following in this the eminent early carcinologists, who are the authors of basic monographs on the Pagurids, like Dana and especially Alcock (1905, *Cat. Indian Decap. Crust. Indian Mus.* 2(1)), whose monograph contains the most complete study of the group yet published. If, e.g., a new species of *Pagurus* is mentioned in the *Zoological Record*, we shall still wonder which genus is actually meant. A suspension of the Rules, giving the name *Pagurus* to Genus B, would cause the same inconveniences. No decision in which the generic name *Pagurus* was maintained could end the present state of confusion. The same holds true for the subfamily name *PAGURINAE*. This name was first used by Ortmann in 1892 (*Zool. Jb. Syst.* 6 : 270, 275). It was employed by this author for the subfamily containing genus B. In 1938 Makarov (*Faune URSS* 10(3) : 156, 169) used the same subfamily name for the other subfamily of *PAGURIDAE*. At present it is practically impossible to know which subfamily is meant when the name *PAGURINAE* is used for it.

20. Therefore I propose the complete suppression of the names *Pagurus* and PAGURINAE, which have by now lost their usefulness because of the different meaning attached to them by different carcinologists. By this action the unambiguous generic names *Eupagurus* Brandt and *Dardanus* Paulson, together with the equally unambiguous subfamily names EUPAGURINAE and DARDANINAE, become valid names. This solution has already been adopted by Professor Th. Monod (1933, *Bull. Com. Etud. Hist. Sci. Afr. occid. franç.* 13 : 25—30). I would suggest however that the name PAGURIDAE be maintained for the family since this name has continually been used by all carcinologists and no ambiguity whatsoever is attached to it. The same holds true for the names based on the generic name *Pagurus* given to those taxa of the family group that are above the family level. It seems to be of little sense to coin new names for these groups.

21. I now submit to the International Commission on Zoological Nomenclature the following proposals in which I ask for :—

(1) the use of the Plenary Powers :—

- (a) to suppress the generic name *Pagurus* Fabricius, 1775 (type species, by selection by Latreille (1810): *Cancer bernhardus* Linnaeus, 1758) for the purposes of the Law of Priority but not for those of the Law of Homonymy ;
- (b) to validate the family-group name PAGURIDAE (correction of PAGURII) Latreille, [1802—1803] (type genus : *Pagurus* Fabricius, 1775) for use as the name for taxa belonging to the family and higher categories within the family-group of categories, but not for taxa belonging to any category within that group below the category of family ;
- (c) to direct that the family-group name DIOGENINAE Ortmann, 1892, is not to be used in preference to the name DARDANINAE Schmitt, 1926, by workers who consider that the type genera of these two nominal family-group taxa are referable to the same family-group taxon ;

(2) the insertion in the *Official List of Generic Names in Zoology* of the under-mentioned generic names :—

- (a) *Dardanus* Paulson, 1875 (gender : masculine) (type species, by monotypy : *Dardanus hellerii* Paulson, 1875) ;
- (b) *Eupagurus* Brandt, 1851 (30th Sept.) (gender : masculine) (type species, by selection by Stimpson (1858) : *Cancer bernhardus* Linnaeus, 1758) ;

(3) the insertion in the *Official Index of Rejected and Invalid Generic Names in Zoology* of the following generic names :—

- (a) *Bernhardus* Dana, 1851 (Nov.-Dec.) (a junior objective synonym of *Eupagurus* Brandt, 1851) ;

- (b) *Pagurus* Fabricius, 1775, as suppressed under the Plenary Powers under (1)(a) above ;
- (c) *Pagurus* Berthold, 1827 (a *nomen nudum*) ;
- (4) a ruling that the nominal species *Cancer bernhardus* Linnaeus, 1758, be interpreted by the lectotype selected by Forest & Holthuis in the present application, namely the specimen figured by Swammerdam in 1737 as fig. 1 on pl. XI of that author's *Bybel der Natuure* ;
- (5) the insertion in the *Official List of Specific Names in Zoology* of the under-mentioned specific names :—
- (a) *bernhardus* Linnaeus, 1758, as published in the combination *Cancer bernhardus* and as defined by the lectotype specified in (4) above (specific name of type species of *Eupagurus* Brandt, 1851) ;
- (b) *sanguinolentus* Quoy & Gaimard, 1825, as published in the combination *Pagurus sanguinolentus* ;
- (6) the insertion in the *Official List of Family-Group Names in Zoology* of the under-mentioned family-group names :—
- (a) DIOGENINAE Ortmann, 1892 (type genus : *Diogenes* Dana, 1851), the entry of this name on the *Official List* to be subject to the following endorsements :—(i) that this name is placed on the *List* for use by those workers who consider on taxonomic grounds that *Diogenes* Dana, 1851, should be placed in a family-group-taxon different from that in which *Dardanus* Paulson, 1875, is placed, and (ii) that, in accordance with the directions given under the Plenary Powers under (1)(c) above, the name DIOGENINAE Ortmann, 1892, is not to be used in preference to the name DARDANINAE Schmitt, 1926, notwithstanding its older date ;
- (b) DARDANINAE Schmitt, 1926 (type genus : *Dardanus* Paulson, 1875), the entry of this name on the *List* to be subject to the following endorsement :—this name to be given preference, in accordance with the directions given under the Plenary Powers under (1)(c) above, over the name DIOGENINAE Ortmann, 1892, by any worker who may consider on taxonomic grounds that *Dardanus* Paulson, 1875, and *Diogenes* Dana, 1851, are referable to the same family-group taxon ;
- (c) EUPAGURINAE Ortmann, 1892 (type genus : *Eupagurus* Brandt, 1851), as the name for taxa belonging to any category within the family-group below the category of family ;

(d) PAGURIDAE (correction of PAGURII) Latreille, [1802—1803] (type genus : *Pagurus* Fabricius, 1775), as the name, under the Plenary Powers under (1)(b) above, for taxa belonging to the family and higher categories within the family-group but not for taxa belonging to any category within that group below the category of family ;

(7) the insertion in the *Official Index of Rejected and Invalid Family-Group Names in Zoology* of the under-mentioned names :—

(a) EUPAGURIDAE (elevation of EUPAGURINAE) Ortmann, 1892 (type genus : *Eupagurus* Brandt, 1851), as the name for taxa belonging to the family and higher categories within the family-group (invalid because for taxa of the foregoing ranks a junior objective synonym of PAGURIDAE (correction of PAGURII) Latreille, [1802—1803]) ;

(b) PAGURINAE (correction at subfamily level of PAGURII) Latreille, [1802—1803], as the name for taxa of all categories within the family-group below the category of family (invalid because, under *Declaration 20*, suppressed automatically as the name for such taxa consequent upon the suppression under the Plenary Powers of the generic name *Pagurus* Fabricius, 1775, the name of the type genus).

22. I should like to add by way of explanation that of the proposals now submitted that which I regard as being of the first importance is the suppression of the generic name *Pagurus* Fabricius. Accordingly, I hope that, if the Commission were to feel that it would be difficult to take this action while at the same time keeping alive the family-name PAGURIDAE (though not the family-group names of lower rank based upon the generic name *Pagurus*), the Commission will give precedence to the request for the suppression of the above generic name. In that event, I would ask the Commission, while rejecting my proposal (1)(b) (proposal for the validation of the family name PAGURIDAE), to place the family-group name EUPAGURINAE Ortmann, 1892, on the *Official List of Family-Group Names in Zoology*. Under this arrangement, the name for the family in question would become EUPAGURIDAE in view of the co-ordinate character of names given to taxa of all categories in the family-group. The adoption of this course would have the following consequential effects on the proposals which I have submitted as regards family-group names :—(i) it would be necessary to delete the qualifications proposed in (6)(c) (relating to the family-group name EUPAGURINAE) ; (ii) proposal (6)(d) (relating to the placing of PAGURIDAE on the *Official List*) and proposal (7)(a) (relating to the placing on the *Official Index* of EUPAGURIDAE, while retaining that name for taxa below full family rank), would need to be deleted. (The proposed deletion, as suggested in (i) above, of the qualification to the entry of EUPAGURINAE on the *Official List* would have the effect



of making that name available at the family-name level instead of only at the subfamily level and lower levels as now proposed.) Finally, (iii) it would be necessary to delete the qualification at present inserted in proposal (7)(b) since in the circumstances envisaged the family-group name based upon the generic name *Pagurus* would become invalid for all purposes instead of (as now proposed) being retained at the family-name level.

### Part III. Discussion and proposals by L. B. Holthuis

23. Of the three solutions to the present problem, it is Solution I which, in my opinion, is the most acceptable. Solution III, it is true, has some attractive aspects, but a number of reasons make me believe that the other Solutions are to be preferred. These reasons are the following :—

(a) Solution III has been adhered to in the publications of only one author (Th. Monod), who rejects the generic name *Pagurus*, while until now all other carcinologists have been using this name, although in two different senses. Acceptance of Solution III would mean that every carcinologist except one would have to change the nomenclature that he has been using thus far. It seems more logical to me to legalize a solution that has been accepted by the majority of carcinologists so that the number of authors that have to change the names adopted by them, be as small as possible.

(b) The generic name *Pagurus* Fabricius is the oldest of the generic names for hermit crabs and it may be considered to be the typical name in this group. As has already been pointed out *Pagurus* is the type genus of the subfamily PAGURINAE, of the family PAGURIDAE, and of the section PAGURIDEA (the latter group containing all hermit crabs). Furthermore the name has penetrated widely in non-systematic literature and even vernacular derivations like “pagures”, “pagurides”, “pagurids”, and “Paguriden” are found in a very large number of scientific and non-scientific publications. From the name *Pagurus* are derived a great number of names for genera of hermit crabs like *Anapagurus*, *Catapagurus*, *Cestopagurus*, *Holopagurus*, *Mixtopagurus*, *Nematopagurus*, *Orthopagurus*, *Parapagurus*, *Sympagurus*, etc. The suppression of the name *Pagurus* would therefore deprive the section PAGURIDEA of the basic name on which the nomenclature of most of its genera and higher taxa is based.

(c) I strongly doubt that the continuation of the use of the generic name *Pagurus* will do much harm. It is true that under Solution I and Solution II the name *Pagurus* will be an ambiguous name for some time, but this state of ambiguity will last only until such time as the decision on this question made by the International Commission on Zoological Nomenclature is generally accepted by zoologists. Such

a period of ambiguity, however, exists in the case of every generic name when the genus so named is split up into two or more genera. When, e.g., an author finds that the species generally placed in a genus X, in his opinion actually belong in two different genera, which he then names X and Y, the name X will be an ambiguous name till the decision of this author has been accepted by other zoologists. Such a period of instability will also occur if Solution III is decided upon by the Commission, as it will take some time before zoologists get acquainted with this decision. I do not see any reason why this period for Solution III should be shorter than for Solution I or Solution II.

(d) I believe that not too much importance should be attached to the ambiguity of the name *Pagurus*. As a generic name it practically always is used in combination with a specific name, and the latter will provide an immediate clue as to the identity of the genus so named. The combination of the generic name *Pagurus* and a specific name will show whether the author using these names belongs to Group I or to Group II. When new species of the genus *Pagurus* are described the description will provide the clue. In this respect too the continued use of the generic name *Pagurus* will not do too much harm.

24. For these reasons I do not believe that Solution III should be preferred to either of the two other Solutions. As far as the latter are concerned, I might put forward the following considerations.

25. In order to legalize Solution II it would be necessary to suspend the Rules, while Solution I is obtainable without such action. A suspension of the Rules is to be given "for the purpose of preventing confusion and of promoting a stable and universally accepted nomenclature" (Hemming, 1953, *Copenhagen Decisions zool. Nomencl.* : 23). In the present case some confusion cannot be prevented since it is already in existence. In order to attain a universally accepted nomenclature, the authors forming either Group I or Group II would have to change the names they have been adopting thus far. In my opinion, a suspension of the Rules would be justified here only if the workers of Group II were distinctly more numerous than those of Group I, so that such a suspension would cause less confusion than would the strict application of the Rules. In Part I of this application the size of Groups I and II have already been indicated jointly by the present applicants. Though I cannot give exact figures of the numbers of the carcinologists of today belonging to one or the other of the two Groups, I am of the opinion that Group I certainly is not smaller than Group II, and that it is growing gradually at the expense of that Group, mainly because it adheres to the Rules. Furthermore, the number of species of genera A and B living in the territory covered by the workers of Group I is larger, I believe, than the number in the region investigated by Group II. Alcock (1905, *Cat. Indian Decap. Crust. Indian Mus.* 2(1) : 174—184), e.g., listed 13 species of *Eupagurus* as belonging to

the fauna of Europe and not less than 55 species of the same genus as occurring in North America.

26. I do not believe therefore that a suspension of the Rules would serve any useful purpose on this occasion. Accordingly, in my opinion such a suspension would not be justified in the present case. For this reason the Commission is asked to :—

(1) place on the *Official List of Generic Names in Zoology* the under-mentioned generic names :—

(a) *Pagurus* Fabricius, 1775 (type species, by subsequent selection by Latreille (1810) : *Cancer bernhardus* Linnaeus, 1758) ;

(b) *Dardanus* Paulson, 1875 (type species, by monotypy : *Dardanus hellerii* Paulson, 1875) ;

(c) *Diogenes* Dana, 1851 (type species, by subsequent selection by Dana (1852) : *Pagurus miles* Fabricius, 1787) ;

(2) place on the *Official Index of Rejected and Invalid Generic Names in Zoology* the under-mentioned generic names :—

(a) *Eupagurus* Brandt, 1851 (a junior objective synonym of *Pagurus* Fabricius, 1775) ;

(b) *Bernhardus* Dana, 1851 (a junior objective synonym of *Pagurus* Fabricius, 1775) ;

(c) *Pagurus* Berthold, 1827 (a *nomen nudum*) ;

(3) rule that the nominal species *Cancer bernhardus* Linnaeus, 1758, be interpreted by the lectotype selected by Forest & Holthuis in the present application, namely the specimen figured by Swammerdam in 1737 as fig. 1 on pl. XI of that author's *Bybel der Natuure* ;

(4) place the under-mentioned specific names on the *Official List of Specific Names in Zoology* :—

(a) *bernhardus* Linnaeus, 1758, as published in the combination *Cancer bernhardus* and as defined by the lectotype specified in (3) above (specific name of type species of *Pagurus* Fabricius, 1775) ;

(b) *miles* Fabricius, 1787, as published in the combination *Pagurus miles* (specific name of type species of *Diogenes* Dana, 1851) ;

(c) *sanguinolentus* Quoy & Gaimard, 1825, as published in the combination *Pagurus sanguinolentus* ;

- (5) place the under-mentioned family-group names on the *Official List of Family-Group Names in Zoology* :—
- (a) DIOGENINAE Ortmann, 1892 (type genus : *Diogenes* Dana, 1851) ;
  - (b) PAGURIDAE (correction by Samouelle, 1819, of PAGURII) Latreille, [1802—1803] (type genus : *Pagurus* Fabricius, 1775) ;
- (6) place the under-mentioned family-group names on the *Official Index of Rejected and Invalid Family-Group Names in Zoology* :—
- (a) EUPAGURINAE Ortmann, 1892 (type genus : *Eupagurus* Brandt, 1851) (invalid because the type genus has as its type species the same species as that which is the type species of *Pagurus* Fabricius, 1775, the type genus of the older family-group taxon PAGURIDAE (correction of PAGURII) Latreille, [1802—1803]) ;
  - (b) PAGURII Latreille, [1802—1803] (type genus : *Pagurus* Fabricius, 1775) (an Invalid Original Spelling for PAGURIDAE) ;
  - (c) PAGURISTINEN Boas, 1924 (type genus : *Paguristes* Dana, 1851) (invalid because a vernacular (German) word and not a Latin or Latinised word).

## II. THE SUBSEQUENT HISTORY OF THE CASE

**2. Registration of the present application :** Upon the receipt in 1954 of the preliminary text of the application by M. J. Forest and Dr. L. B. Holthuis, the question of the status to be accorded to the generic name *Pagurus* Fabricius, 1775, was allotted the Registered Number Z.N.(S.) 859.

**3. Publication of the present application :** The present application was sent to the printer on 23rd August 1955 and was published on 30th December in the same year in Part 10 of Volume 11 of the *Bulletin of Zoological Nomenclature* (Forest & Holthuis, 1955, *Bull. zool. Nomencl.* **11** : 307—321).

**4. Issue of Public Notices :** Under the revised procedure prescribed by the Thirteenth International Congress of Zoology, Paris, 1948 (1950, *Bull. zool. Nomencl.* **4** : 51—56), Public Notice of the possible use by the International Commission on Zoological Nomenclature of its Plenary Powers in the present case was given on 30th December 1955 (a) in Part 10 of Volume 11 of the *Bulletin of Zoological Nomenclature* (the Part in which the application by M. Forest and Dr. Holthuis was published) and (b) to the prescribed serial publications. In addition such Notice was given also to four general zoological serial publications.

**5. Comments Received :** Prior to the publication of the present application a comment was received from one specialist who had been acquainted of the submission of this case to the Commission by one of the applicants, and after the publication of this application in the *Bulletin* expressions of opinion were received from ten other specialists. Of the eleven specialists concerned nine favoured the solution advocated by Dr. Holthuis, one supported the solution recommended by M. Forest, while another put forward an alternative which, like that submitted by M. Forest involved the use of the Commission's Plenary Powers but differed from that Plan in that it contemplated the retention of the generic name *Pagurus* Fabricius, though with a type species designated under the Plenary Powers instead of the suppression of that name under those Powers as envisaged under the Plan submitted by M. Forest. The comments so received are reproduced in the immediately following paragraphs ; those in favour of the Holthuis Plan are given in paragraphs 6 to 12 below, that in favour of the Forest Plan in paragraph 13 below, while that in favour of a solution differing from both the other Plans suggested is given in paragraph 14.

**6. Support for Holthuis Plan received from J. D. Macdonald (British Museum (Natural History), London), R. B. Pike (Marine Station, Millport, Isle of Cumbrae, Scotland) and D. I. Williamson (Marine Biological Station, Port Erin, Isle of Man) :** On 23rd March 1956, Mr. J. D. Macdonald (*British Museum (Natural History), London*), Mr. R. B. Pike (*Marine Station, Millport, Isle of Cumbrae, Scotland*) and Dr. D. I. Williamson (*Marine Biological*

*Station, Port Erin, Isle of Man*) addressed the following joint letter to the office of the Commission in support of the Holthuis Plan for dealing with the present case (Macdonald, Pike & Williamson, 1956, *Bull. zool. Nomencl.* **11** : 356) :—

Of the three possible solutions to the *Pagurus* problem set out by Drs. Forest and Holthuis we favour the adoption of Solution I. No ruling of the Commission can alter the fact that the name *Pagurus* has been and is being used for two different genera. The adoption of *any* of the suggested solutions would prevent ambiguity in future references to either of these genera. Let us, then, adopt the solution which does not involve use of the Plenary Powers.

We are unconvinced by the respective arguments of both Dr. Dollfus and Dr. Forest for the suppression of the name *Pagurus*. Should, however, the Commission decide to suppress this name we wish to stress that no obstacle should be placed to the raising to family rank of the two subfamilies known under Solution I as PAGURINAE and DARDANINAE (=DIOGENINAE). Such an obstacle would occur if the names *Pagurus* and PAGURINAE were suppressed but the family name PAGURIDAE retained, as proposed by Dr. Forest. That the two subfamilies PAGURINAE and DARDANINAE should be raised to family rank was implied by F. J. L. Hart (1937) (*Canad. J. Res. (D)* **15** : 179—220) and is proposed by us in a paper on the larvae of the British Paguridea (in preparation).

**7. Support for Holthuis Plan received from J. S. Garth (University of Southern California, Los Angeles, U.S.A.) :** On 6th April 1956, Dr. J. S. Garth (*University of Southern California, Los Angeles, U.S.A.*) addressed the following letter to the Office of the Commission in support of the Holthuis Plan (Garth, 1956, *Bull. zool. Nomencl.* **11** : 356) :—

I should like to register with the Commission my support of the discussion and proposal of L. B. Holthuis regarding his joint application with J. Forest for a decision regarding the status of the generic name *Pagurus* Fabricius, 1775 (Class Crustacea, Order Decapoda) (*Bull. zool. Nomencl.* **11** : 307—321, 1955).

In view of the facts presented in Part I of the proposal, with which both authors are in agreement, it would seem evident that Solution I, as argued by Dr. Holthuis, is the more acceptable. That this solution may be attained without recourse by the Commission to its Plenary Powers to suppress the rules makes it the preferred one to carcinologists

who would like to see the rules largely self operative. Furthermore, this solution would tend to support action already taken by the Commission in rendering *Opinion 11*, rejection of which on the part of certain workers is largely responsible for the present state of confusion, according to Walton and Stevens (1955, *Bull. S. Calif. Acad. Sci.* 54 : 40—42).

That *Pagurus* is the oldest name in the group, the type genus of the subfamily, family, and section, the source of many vernacular derivations, and the root of most hermit crab genera are to me cogent reasons for its retention. The suppression of the name at the generic level and the retention of its higher level derivatives PAGURINAE, PAGURIDAE, and PAGURIDEA, as proposed by Dr. Forest, I find illogical. The little more than one page of actions required by the Commission to implement Solution I, as compared to the two and a half pages of actions required to implement Solution III, fairly demonstrates the relative simplicity of the Holthuis over the Forest solution, and to the former, therefore, I give unhesitating support.

**8. Support for Holthuis Plan received from Janet Haig (University of Southern California, Los Angeles, U.S.A.) :** On 6th April 1956, Miss Janet Haig (*University of Southern California, Los Angeles, U.S.A.*) addressed the following letter to the Office of the Commission in support of the Holthuis Plan (Haig, 1956, *Bull. zool. Nomencl.* 12 : 15) :—

I wish to register with the Commission my support of the discussion and proposal of L. B. Holthuis, which forms Part III (paragraphs 23—26) of his joint application with J. Forest for a decision regarding the status of the generic name *Pagurus* Fabricius, 1775 (*Bull. zool. Nomencl.* 11 : 307—321, 1955).

The facts of the case as stated in Part I of this proposal (pp. 307—313), and as earlier set forth by Walton and Stevens (*Bull. S. Calif. Acad. Sci.* 54 : 40—42, 1955), make it clear that “Solution I” of the proposal, that advocated by Holthuis, is correct according to the strict application of the International Rules of Zoological Nomenclature. Adoption of “Solution III” (: 310), advocated by Forest, would necessitate the use of the Plenary Powers of the Commission to suppress the generic name *Pagurus* Fabricius, 1775.

I agree with Holthuis that it would be undesirable to suppress a name which is in common use for the type genus of a family and other categories and which is the root of many genera of hermit crabs, and that to follow this course would not necessarily solve the problem of the ambiguity attached to the name. Furthermore, as Forest suggests

in Part II of the joint application (paragraphs 18—22), should the Commission suppress *Pagurus Fabricius*, 1775, it might at the same time find it necessary to suppress the name PAGURIDAE for the family. This, in my opinion, would be a most unfortunate result if Forest's solution of the problem should be adopted.

For the foregoing reasons I should prefer to see the adoption by the Commission of "Solution I" (: 310) as advocated by Holthuis.

**9. Support for Holthuis Plan received from Belle A. Stevens (University of Washington, Seattle, U.S.A.) :** On 9th May 1956, Miss Belle A. Stevens (*University of Washington, Seattle, U.S.A.*) addressed a letter to the Office of the Commission in which she intimated her support for the Holthuis Plan as follows :—

. . . . .

I subscribe to the views of Dr. Holthuis in requests 1 and 2 (p. 320) regarding generic names, and also to 3, 4a and b, and 5 (p. 320), and 6 (p. 321).

**10. Support for Holthuis Plan received from D. Hall (University of Malaya, Singapore) :** On 31st May 1956, Dr. D. S. Johnson (*University of Malaya, Singapore*)<sup>2</sup> communicated to the Office of the Commission a paper in regard to the present case in a postscript to which he quoted the views of his colleague, Mr. D. Hall, who supported the Holthuis Plan. The relevant extract from the paper so received is as follows :—

The only other working carcinologist at the present moment in Singapore is Mr. D. Hall, I have permission to quote his comments, which are as follows :

"I like Solution III for its originality ; I like Solution II for its convenience ; but I think that Solution I is the answer."

**11. Support for Holthuis Plan received from Fenner A. Chace, Jr. (Smithsonian Institution, U.S. National Museum, Washington) :**

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<sup>2</sup> For Dr. Johnson's own comment on this case see paragraph 14.



On 8th June 1956, Dr. Fenner A. Chace, Jr. (*Smithsonian Institution, U.S. National Museum, Washington*) addressed the following letter to the Office of the Commission in support of the Holthuis Plan :—

In regard to the application by J. Forest and L. B. Holthuis on the status of the generic name *Pagurus* Fabricius, 1775 (Z.N.(S.) 859), I would like to offer the following comments.

Dr. Forest and Dr. Holthuis are to be commended for their excellent analysis of this perplexing problem and, especially, for the ingenious way in which they propose to solve the secondary, but no less difficult, question of the identity of *Cancer bernhardus* Linnaeus. That they were able to resolve this latter aspect without recourse to the Plenary Powers is most praiseworthy.

I have always been one of those carcinologists defined as "Group I" in paragraph 4 of the Application. I therefore naturally favor "Solution I" and heartily endorse Dr. Holthuis's arguments for this solution. As he has pointed out in paragraph 25, nothing is to be gained by resorting to the Plenary Powers in this case. "Solution II" would not "prevent" existing confusion nor would it promote "a stable and universally accepted nomenclature" any more effectively than would "Solution I". "Solution III" would not only force practically all carcinologists to adopt an unfamiliar nomenclature but it would eliminate from the systematic literature the name *Pagurus* which has come into more or less general semipopular use for all hermit crabs.

In supporting Dr. Holthuis's recommendations, I include his request for recognition of the name **DIOGENINAE** for the subfamily to which "Genus B" belongs. It is apparent from paragraph 26(5) that paragraph 16 (in which the suppression of **DIOGENINAE** in favor of **DARDANINAE** is proposed) should have been in Part II rather than in Part I of the application. The argument that rejection of the junior synonym **DARDANINAE** for the subfamily which includes both *Dardanus* and *Diogenes* would "do violence to established practice" becomes of little importance when it is realized that this name has been in use for only 30 years. The fact that *Diogenes* is an aberrant genus is of little significance in a purely nomenclatural matter; those who would stress the aberrant nature of *Diogenes* may still use the name **DARDANINAE** for the group of genera more closely related to *Dardanus*.

**12. Support for Holthuis Plan received from Waldo L. Schmitt (Smithsonian Institution, Department of Zoology, U.S. National**

**Museum, Washington)** : On 20th June 1956, Dr. Waldo L. Schmitt (*Smithsonian Institution, Department of Zoology, U.S. National Museum, Washington*) addressed the following letter to the Office of the Commission in support of the Holthuis Plan :—

Regarding the application made by J. Forest and L. B. Holthuis on the status of the generic name *Pagurus* Fabricius, 1775, there is nothing that I can add to the letter dated 8th June addressed to you by Dr. Fenner A. Chace, Jr. [reproduced in paragraph 10 above]. I heartily endorse all that he says and hope that "Solution I" will be adopted.

**13. Support for Forest Plan received from Robert Ph. Dollfus (Muséum National d'Histoire Naturelle, Paris)** : On 20th December 1954, prior to the publication of the present application, Dr. Robert Ph. Dollfus (*Muséum National d'Histoire Naturelle, Paris*) communicated the following paper to the Office of the Commission in support of the Forest Plan (Dollfus, 1955, *Bull. zool. Nomencl.* **11** : 322—324) :—

**Proposition pour le rejet définitif des noms de genres "Pagurus" Fabricius, 1775, et "Pagurus" Latreille, 1803 ; proposition d'accepter définitivement "Eupagurus" Brandt, 1851 (sub. gen.) et "Dardanus" Paulson, 1875, comme noms de genres**

par ROBERT PH. DOLLFUS

Joh. Chr. Fabricius (1775, p. 410 ; 1781 p. 506 ; 1787 p. 327 ; 1793 p. 468 ; 1798 p. 411) a désigné comme "chef de file" et première espèce de son genre *Pagurus*, le "*Cancer latro* L.". L'usage n'était pas répandu à cette époque de désigner un "type du genre", mais les auteurs désignaient un "chef de file" et il est parfaitement clair que, pour Fabricius, le "chef de file" (nous disons actuellement l'espèce type) était *Cancer Latro* L. 1767.

Comme seconde espèce, en 1775 et 1781, Fabricius a mentionné "*Cancer bernhardus* L.", mais, en 1787, 1793 et 1798 il a mentionné comme seconde espèce *Pagurus aniculus* Fabr., plaçant l'espèce

“*Bernhardus*” à la 3<sup>e</sup> place, la considérant donc comme plus éloignée du “chef de file”†. Dans le Nomenclator de Fr. Weber (1795 p. 93)‡ l'espèce *Latro* est aussi la première et l'espèce *Bernhardus* la 3<sup>e</sup>.

Plus de 25 ans après la création de *Pagurus* par Fabricius est apparu le genre homonyme *Pagurus* P. A. Latreille (1803, t. V, p. 160, 167§ ; 1803 t. VI, p. 137—161 ; 1806 p. 48 ; 1810 p. 422¶ ; 1818 p. 358—367|| ; 1829 p. 76—77), avec, comme “chef de file”, ou “exemple”, ou espèce représentative du genre [c'est à dire espèce type] “*Cancer Bernhardus* Lin.”.

Le mot “type” est employé pour la première fois par Latreille en 1810 (p. 421—444 “table des genres avec l'indication de l'espèce qui leur sert de type”)††. Dans cette publication, à propos du “type” Latreille ne cite nulle part Fabricius comme auteur du “genre *Pagurus*”‡‡. En 1806, p. 46, on lit : “gen. *Pagurus* Dald. §§ Fab., Lam.—*Cancer*, Linn.—*Astacus* de Geer” et plus tard (1829 p. 77) : “Pagures propres, *Pagurus*, Latr.”. Il y a donc bien un genre *Pagurus* Latreille, qui n'est pas celui de Fabricius et *Cancer latro* L. est accepté, dans la même publication (1829 p. 76) comme type de *Birgus* Leach (1815), sans qu'il soit question du genre *Pagurus* Fabr.

† L'importance des espèces “chefs de file” pour le choix de l'espèce type a été soulignée dans les paragraphes *r* et *s* de l'article 30 des Règles Internationales de la Nomenclature Zoologique.

‡ Weber (Friderico)—Nomenclator entomologicus secundum Entomologiam systematicam ill. Fabricii adjectis speciebus recens detectis et varietatibus, conscriptus a . . . VIII + 172 p. ; Chilonii et Hamburgi 1795.

§ Aucune espèce n'est mentionnée par Latreille 1803 p. 191 à propos du genre *Pagure*.

¶ Aucune espèce n'est mentionnée par Latreille 1810 p. 100 pour le genre “*Pagure. Pagurus*”.

|| En 1818, p. 359, Latreille dit que Fabricius a détaché les pagures des crabes macroures de Linné “pour en former un genre propre dont il a plus particulièrement développé les caractères dans le supplément de son Entomologie systématique”, mais Latreille, p. 365 écrit : “Les Pagures, *Paguri* Leach” sans attribuer le genre à Fabricius.

††D'après l'*Opinion* 11 (*Opinions rendered by the International Commission on Zoological Nomenclature. Smithsonian Institution, public. n° 1938, July, 1910, p. 17—18*), les espèces désignées par Latreille en 1810 comme types des genres doivent être acceptées. Cela obligerait à accepter l'espèce “*Bernhardus* Fabr.” comme type du genre *Pagurus*, si l'*Opinion* 11 ne concluait : “It is self-understood that this *Opinion* does not imply that Latreille's (1810) designations should take precedence over any earlier writings”. Dans le cas présent, le choix de l'espèce *Bernhardus* par Latreille comme espèce type de *Pagurus* Latreille n'est pas à retenir pour l'espèce type de *Pagurus* J. C. Fabricius. Le genre *Pagurus* Latreille disparaît comme homonyme de *Pagurus* J. C. Fabricius. Il est évident que l'*Opinion* 11 s'oppose à un effet rétroactif.

‡‡Latreille (1803 p. 136) dit seulement : “Les bernard l'hermite, que Fabricius appelle assez mal à propos *pagurus*, *paguri*, forment le genre le plus étendu de cette famille (Famille 3 : Paguriens) ; tel est le motif de sa dénomination”. Latreille a donc emprunté le “genre” *Pagurus*.

§§C'est à dire Daldorff (Dagobert Carl de) ; ouvrage manuscrit.

Beaucoup de carcinologistes ont suivi Latreille, par exemple W. E. Leach (1815 p. 337), Henri Milne-Edwards (1836 p. 266 ; 1848 p. 59), James E. Benedict (1896 p. 99 note\*), etc. . . . et accepté *Pagurus* avec *P. bernhardus* (L.) comme espèce type† mais beaucoup d'autres ont accepté comme genre pour l'espèce *bernhardus*, le sous-genre *Eupagurus* Joh. Fried. Brandt 1851 (= gen. *Bernhardus* James D. Dana 1852). Lorsque J. F. Brandt (1851 p. 29) proposa *Eupagurus* comme sous-genre de *Pagurus* Joh. Chr. Fabr., il eut soin de préciser que *Eupagurus* était pris dans le sens de "Pagures ordinaires" H. M. Edwards (1848 p. 59), ayant comme chef de file et première espèce "*Pagurus Bernhardus* Fabr.". L'acception du genre *Eupagurus* ne prêtant à aucune ambiguïté, Brandt a été suivi par la plupart des carcinologistes. Toutefois Mary J. Rathbun (1900 p. 303) comme l'avait déjà proposé J. E. Benedict (1896 p. 99 note \*) a rejeté *Eupagurus* Brandt comme étant synonyme de *Pagurus* Fabr. et repris *Pagurus* Fabr. pour les espèces que l'on plaçait, depuis Brandt, dans *Eupagurus*. Agissant ainsi M. J. Rathbun n'a pas tenu compte que l'espèce type de *Pagurus* est *Cancer latro* L. Cette décision de M. J. Rathbun avait pour conséquences que :

1° tous les *Eupagurus* devenaient des *Pagurus*.

2° toutes les espèces laissées jusqu'alors dans *Pagurus*‡, n'ayant plus d'espèce type devaient être enrôlées sous un autre nom générique. Tout d'abord, M. J. Rathbun (1900 p. 302) choisit, au moins pour quelques unes de celles-ci, *Petrochirus* W. Stimpson 1858, dont elle dut étendre beaucoup l'acception, ensuite (1902 p. 33), elle adopta *Dardanus* Paulson 1875, fondé sur *Pagurus depressus* C. Heller 1861. Peu auparavant, James E. Benedict (1901 p. 141) avait proposé "*Pagurias new name*" pour les espèces ne pouvant pas être conservées dans le même genre que l'espèce *bernhardus* et il plaça dans *Pagurias* le *Pagurus insignis* H. Saussure 1858 qui appartient au groupe *arrosor pectinatus*. Si l'on admet dans le même genre, d'une part : *arrosor*, *pectinatus*, *insignis*, et d'autre part : *depressus*, *Pagurias* J. E. Benedict ne peut pas être conservé, c'est pourquoi M. J. Rathbun (1902 p. 33) l'a placé en synonymie de *Dardanus* Paulson.§

† Il va de soi que, par *P. bernardus* (Linné), il faut entendre celui de Linné 1767 p. 1049, n° 57 (Lovisae Ulricae Reginae Museum [Stockholm] n° 454 et Fauna suecica 2032\*) qui est l'espèce à chélicère droit plus grand que le gauche, figurée par Swammerdam *Bibl. t. II, fig. 1, 2*) et non pas le "*Bernhardus*" de 1758 p. 631, n° 40, qui est certainement une toute autre espèce, ayant le chélicère gauche plus grand que le droit. C'est Jacques Forest qui a attiré mon attention sur ce point.

‡ Par exemple : *arrosor*, *pectinatus*, *insignis*, *calidus*, *depressus*, *punctulatus*, *sculptipes*, *granulimanus*, etc.

§ *Pagurias* pourrait être repris comme sous-genre de *Dardanus* s'il devenait nécessaire de séparer *arrosor* et *depressus* dans des sous-genres différents.

Waldo L. Schmitt (1926 p. 45) a aussi adopté *Dardanus*, y comprenant le groupe *arrosor-pectinatus-insignis* en même temps que *granulimanus* Miers.

Théodore Monod (1933 p. 480, 482) a également admis *Dardanus* pour *arrosor* Herbst 1794, *granulimanus* Miers 1881 et *calidus* A. Risso 1826 ; il a conservé *Eupagurus* Brandt. Beaucoup d'autres carcinologistes, tels que A. Alcock (1905 p. 26, 122, 174), Otto Pesta (1918 p. 227), H. Balss (1921 p. 43 ; 1927 p. 376 ; 1936 p. 22) ; José V. Yap-Chiongca (1938 p. 185), G. Melin (1939 p. 20, 29), E. L. Bouvier (1941, p. 129) etc., ont aussi conservé *Eupagurus* pour les espèces du groupe *bernhardus*, sans toutefois reprendre *Dardanus* Paulson.

Actuellement, il règne une telle confusion dans l'emploi de *Pagurus* que nous demandons à la *Commission Internationale de la Nomenclature Zoologique* :

- 1° de supprimer définitivement *Pagurus* Fabricius et *Pagurus* Latreille ;
- 2° d'admettre comme nomina conservanda *Eupagurus* Brandt, *Dardanus* O. Paulson et *Birgus* Leach.†

**14. An Alternative Plan suggested by D. S. Johnson (University of Malaya, Singapore) :** On 31st May 1956, Dr. D. S. Johnson (*University of Malaya, Singapore*) communicated to the Office of the Commission a paper in which he suggested an alternative plan to those proposed by M. Forest and Dr. Holthuis. This communication, with the exception of the extract relating to the views of a colleague, Mr. Hall, which has been reproduced in paragraph 10 above, was as follows :—

While I appreciate the desire of J. Forest and L. B. Holthuis to stabilize the nomenclature of the PAGURIDAE, I feel that neither of the solutions supported by these authors is fully satisfactory.

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† Il ne peut pas être question de rejeter *Birgus* W. E. Leach 1815 au profit de *Pagurus* J. C. Fabricius 1775, comme ayant la même espèce type : *Cancer latro* L. En effect *Birgus* est universellement employé depuis 1815 et ne prête à aucune ambiguïté.

I feel that in respect of such questions as the present the viewpoint of the specialist is of secondary importance and more weight should be attached to the views of the general zoologist. The thorough systematist has to know all possible usages of the names in question so that whatever solution is adopted is unlikely to cause further confusion to specialist systematists. Adoption of either Solution I or Solution III would cause considerable confusion to non-specialists.

The name *Eupagurus* is very widely used in the non-specialist literature, and all the more important morphological works on genus "A" bear this name. Almost all widely used zoological text books use the names *Eupagurus* and *Pagurus* to mean genus "A" and genus "B" respectively. The American text Storer *General Zoology* is an exception; but this text only includes genus "A" which it terms *Pagurus*. Other American texts referring to these genera have little circulation outside the U.S.A., whilst several European texts which follow Solution I (e.g. Kükenthal and Krumbach) are widely used in the U.S.A.

In connection with the advisability of using Solution I or Solution II Holthuis makes some estimates of the relative number of carcinologists following each of these two conclusions and the relative numbers of species involved in the areas where they work. I feel these estimates are biased in favour of Solution I.

To my knowledge the carcinologists of Indo-China should be added to those following Solution II. In this country (Malaya) Solution II has hitherto been followed from museum labels. Until Alcock's basic work is superseded Solution II will indeed remain the obvious one for all workers in this region of the world.

Holthuis suggests that more species of groups "A" and "B" occur in the areas where authors follow strict priority than in those where authors follow Solution II. In view of the rich development of group B in the Indo-West Pacific region this seems to be extremely unlikely. In this connection it should be noted that papers written by authors from India to Japan who follow Solution II are mainly concerned with the richer fauna of the central areas.

For the above reasons I consider that Solution II is easily the most acceptable of the three possibilities. Solution III has the advantage of preserving the name *Eupagurus* and I think it is preferable to

Solution I. If Solution III is adopted the family name should be EUPAGURIDAE.

It seems quite clear that carcinologists are hopelessly divided on this issue. Therefore I think the Commission should reserve judgment until some assessment of feeling amongst non-specialists can be obtained.

I conducted a private survey on these lines in this Department. The results showed (excluding myself) three in favour of Solution II and two (one of who is an American) neutral in their opinions. One of those supporting Solution II said he had no objection to Solution III, but nobody gave unqualified support to either Solutions I or III.

**15. The problem represented by the generic name "Latro" Billberg, 1820 :** During the Prescribed Waiting Period of six months following the publication of the present application in the present case a complication arose through the discovery of the generic name *Latro* Billberg, 1820, the name for a hitherto completely overlooked nominal genus closely associated with the names dealt with in the application submitted by M. Forest and Dr. Holthuis. This problem came to light quite accidentally as the result of an examination by the Secretary of Billberg's *Enumeratio Insectorum* undertaken in connection with the name *Sao* Billberg, 1820, an obscure senior homonym of the well-known name *Sao* Barrande, 1846 in Trilobites (as to which an application—Z.N.(S.) 666—had been submitted for validation under the Plenary Powers<sup>3</sup>). Immediately upon the unwelcome discovery of the name *Latro* Billberg correspondence ensued between the Secretary and Dr. Holthuis and M. Forest with a view to the devising of suitable supplementary proposals for dealing with the issue so raised. This culminated in the communication to the Office of the Commission on 1st October 1956 of a letter in which, after jointly selecting a type species for this genus, M. Forest and Dr. Holthuis submitted alternative proposals for dealing with this generic name, the choice between these alternatives to depend upon the decision to be taken by the Commission as between the various Plans which had been suggested for

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<sup>3</sup> For the application here referred to see Poulsen, 1956, *Bull. zool. Nomencl.* 12 : 131—135.

settling the *Pagurus*-problem. The letter so submitted was as follows :—

**Selection under Rule (g) in Article 30 of the “ Règles ” of a  
type species for the nominal genus “ *Latro* ” Billberg, 1820  
(Class Crustacea, Order Decapoda)**

By J. FOREST

(*Muséum National d'Histoire Naturelle, Paris*)

and

L. B. HOLTHUIS

(*Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands*)

(*letter dated 1st October 1956 to Francis Hemming, Secretary  
to the International Commission on Zoological Nomenclature*)

We are writing to you about the generic name *Latro* Billberg, 1820, which has an important bearing on certain of the proposals now before the International Commission in connection with the generic name *Pagurus* Fabricius, 1775 (*Bull. zool. Nomencl.* **11** : 307—321). This name, you will remember, only came to notice when in connection with a case relating to the Trilobite name *Sao* Barrande, 1846, you yourself examined Billberg's *Enumeratio Ins. Mus. Billberg.* of 1820 and sent Holthuis for examination a transcript of the portion relating to the Class Crustacea.

On 20th April last Holthuis sent you particulars of the names for taxa belonging to the Crustacea which on examining the material which you had sent him, he found to be new. Among these was the generic name *Latro* Billberg (: 134). The following three species were placed in this genus by Billberg :—(1) *Cancer bernhardus* Linnaeus, 1758 ; (2) *Pagurus araneiformis* Fabricius, 1775 (specific name misspelled as *araneaeformis* by Billberg) ; (3) *Cancer diogenes* Linnaeus, 1758.

Owing to the long neglect of Billberg's work no type species has ever been selected for his genus *Latro*, which in consequence is at present indeterminate in content and by reason of its relatively early date constitutes a threat to the stability of the nomenclature of the species concerned.

In order to put an end to this undesirable state of affairs, we here select *Cancer bernhardus* Linnaeus, 1758 (= *Latro bernhardus* (Linnaeus,



1758)) to be the type species of the genus *Latro* Billberg, 1820. By this selection the name *Latro* Billberg, 1820, becomes a junior objective synonym of *Pagurus* Fabricius, 1775, the two genera having the same species as type species at least if Solution I put forward in our joint proposal is accepted. In the case that either Solution II or Solution III is accepted, *Latro* Billberg, 1820, by the above type selection becomes a senior objective synonym of *Eupagurus* Brandt, 1851, in which case we request the suppression of the name *Latro* Billberg, 1820, for the purposes of the Law of Priority but not for those of the Law of Homonymy.

We shall be grateful if you will be so kind as to treat the present letter as constituting a supplement to our application regarding the name *Pagurus* Fabricius and if, when submitting that case to the Commission, you will add a recommendation that, if Solution I is adopted, the objectively invalid name *Latro* Billberg, 1820, be placed on the *Official Index of Rejected and Invalid Generic Names in Zoology* and in case either of the other Solutions is adopted, the name *Latro* Billberg, 1820, be suppressed under the Plenary Powers and thereupon placed on the *Official Index of Rejected and Invalid Generic Names in Zoology*.

**16. Completion of the information needed to enable the International Commission to reach a decision in the present case :** The receipt from M. Forest and Dr. Holthuis of the supplementary application arising out of the discovery of the generic name *Latro* Billberg completed the information needed for the submission to the International Commission of proposals in regard to the Plans for dealing with the *Pagurus* problem advocated by Dr. Holthuis (maintenance of *Pagurus* for *Cancer bernhardus* Linnaeus, as required under the normal provisions of the *Règles*) and by M. Forest (suppression of *Pagurus* under the Plenary Powers and acceptance of *Eupagurus* Brandt for *Cancer bernhardus*) respectively. In the application submitted in this case M. Forest and Dr. Holthuis had however discussed briefly a third course namely the use of the Plenary Powers to designate *Pagurus punctulatus* Olivier, 1811 (thereby making *Pagurus* Fabricius a senior subjective synonym of *Dardanus* Paulson, 1875) and acceptance of *Eupagurus* Brandt as the name for the genus containing *Cancer bernhardus* Linnaeus<sup>4</sup>. This solution, which represented the current practice of many specialists in Europe,

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<sup>4</sup> See the table given in paragraph 7 of the application reproduced in paragraph 1 of the present *Opinion* (: 221).

was not recommended either by M. Forest or by Dr. Holthuis. When towards the end of the Prescribed Waiting Period of six months following the publication of the present application in the *Bulletin of Zoological Nomenclature*, the Secretary took into consideration the form of the proposals to be submitted to the Commission for decision, he reached the conclusion that the proper course would be so to present the case as to put before the Commission a statement setting out in detail the action which would be necessary if the Commission were to decide in favour of the solution represented by the designation under the Plenary Powers of *Pagurus punctulatus* Olivier as the type species of *Pagurus* Fabricius. Mr. Hemming accordingly entered into correspondence with Dr. Holthuis and M. Forest with a view to enabling him to build up for this possible solution a statement of the action required in as great detail as that already provided in regard to the solutions recommended by M. Forest and Dr. Holthuis respectively. Both the applicants agreed that such a statement was required and that it would have been better if this had been furnished in their original application. In the course of the correspondence between the Secretary and the applicants on this matter a new point emerged ; this was in regard to the nominal species which would need to be designated under the Plenary Powers to be the type species of *Pagurus* Fabricius if the foregoing solution were to be adopted. While, as stated in the original application, the nominal species *Pagurus punctulatus* Olivier, 1811, was currently accepted as the type species of *Pagurus* Fabricius by the group of specialists concerned, this was for historical reasons and the specific name *punctulatus* Olivier was not regarded as being the oldest such name for the taxon in question, the name accepted as the oldest such name being *megistos* Herbst, 1804, as published in the combination *Cancer megistos*. It was accordingly agreed between the Secretary and the applicants that in the formulation of this possible solution the Commission should be asked to designate the nominal species *Cancer megistos* Herbst and not the later established nominal species *Pagurus punctulatus* Olivier to be the type species of *Pagurus* Fabricius, it being considered that, if the Plenary Powers were to be used to designate a type species for that genus, the nominal species so to be designated should not only represent the taxon which it was desired should be typified by that genus but in addition should be the nominal species bearing the oldest

specific name subjectively applicable to that taxon. As the result of the consultations described above, the Secretary drew up detailed statements setting out the action by the Commission which would be required to give effect (a) to the Holthuis Plan, (b) to a scheme based upon the acceptance of *Cancer megistos* Herbst as the type species of *Pagurus* Fabricius, and (c) to the Forest Plan (suppression of the generic name *Pagurus* Fabricius). The statements so drawn up were annexed as Appendices 4, 5 and 6 respectively to the paper later submitted to the Commission by the Secretary (paragraph 18 below).

**17. Procedural arrangements made for obtaining a decision from the Commission in the present case :** Consideration was given next by the Secretary to the question of the form of Voting Paper most convenient for adoption in the present case. After consultation with the applicants the Secretary decided to submit a Voting Paper divided into two parts. In Part 1 the members of the Commission would be asked to indicate which of the three possible solutions of the *Pagurus* problem he considered the best. In Part 2 each Commissioner would be asked to indicate which solution he would favour in the event of the solution which he regarded as being the best failing to secure the approval of the Commission as a whole. The detailed arrangements adopted in connection with the Voting Paper so designed were set out in paragraphs 14 and 15 of the paper reproduced in the immediately following paragraph which was issued to the Commission by the Secretary concurrently with the Voting Paper in this case.

**18. Presentation to the International Commission by the Secretary of proposals giving effect to whichever of the three Plans suggested might be regarded by it as the most appropriate :** On 23rd October 1956 Mr. Hemming, as Secretary, submitted to the Commission a comprehensive document setting out (a) the issues involved in the present case, (b) the nature of the decision which would be required for giving effect to whichever of the three plans which had been proposed might be regarded by the Commission as the most appropriate, and (c) the voting procedure proposed to be adopted. The paper so submitted was as follows, except that, in order to avoid the repetition of particulars given earlier in the

present *Opinion*, the following passages are here omitted :—  
 (i) paragraphs 2 to 4, which contained a brief recital of the history of the present application up to the time of its publication in the *Bulletin of Zoological Nomenclature* and the issue of Public Notices regarding the possible use by the Commission of its Plenary Powers in the present case ; (ii) paragraph 7, which contained a résumé of the comments which had been received from interested specialists<sup>5</sup> ; (iii) Appendix 2 which contained the Supplementary Application submitted by M. Forest and Dr. Holthuis in October 1956, the text of which has been reproduced in paragraph 15 of the present *Opinion* :—

**Alternative methods for bringing to an end the existing confusion arising from discordant uses of the generic name “Pagurus”  
 Fabricius, 1775 (Class Crustacea, Order Decapoda)**

By FRANCIS HEMMING, C.M.G., C.B.E.

(*Secretary to the International Commission on Zoological Nomenclature*)

The purpose of the present paper is to provide a basis for the International Commission on Zoological Nomenclature to take a decision as to the method to be adopted for bringing to an end the existing confusion arising from discordant uses of the generic name *Pagurus* Fabricius, 1775 (Class Crustacea, Order Decapoda).

. . . . .

**5. Nature of the issues involved :** As a preliminary to a proper understanding of the comments received in the present case a brief explanation of the issues involved is required. The fundamental difficulty is that the generic name *Pagurus* Fabricius is widely used for two quite different genera, one of these usages being in strict accordance with the provisions of the *Règles*, the other not. For the purpose of clarity these genera are referred to in the Forest/Holthuis application as Genus “A” and Genus “B” respectively. The genus to which the name *Pagurus* Fabricius correctly applied is that styled genus “A” by the applicants. Three possible solutions are discussed by the applicants, namely :—

(a) “**Solution I**” :

This involves the strict application of the *Règles* and in consequence the use of the name *Pagurus* Fabricius, 1775, for genus “A” and that of *Dardanus* Paulson, 1875, for genus “B”.

<sup>5</sup> The comments here referred to have been reproduced in paragraphs 6 to 14 of the present *Opinion*.

This is the solution recommended by Dr. Holthuis in the application submitted.

(b) “Solution II” :

This involves the use of the Plenary Powers to designate as the type species of *Pagurus* Fabricius a species which would secure the application of that name to genus “B”. This solution is discussed in the Forest/Holthuis application but is not recommended by either of the applicants.

(c) “Solution III” :

Under this solution the Commission would use its Plenary Powers to suppress the generic name *Pagurus* Fabricius, this solution being put forward in the belief that the name *Pagurus* has been so severely compromised by discordant usages that it has lost its utility and that in the interests of stability the best course would be to get rid of it. This is the solution advocated by M. Forest in the application submitted.

**6. Weight of current practice :** The weight of current practice is discussed in paragraphs 8—10 in Part 1 of the present application, the introductory Part written jointly by M. Forest and Dr. Holthuis, to which special attention is here drawn.<sup>6</sup> From the information so supplied it appears that the solution styled “Solution I” (strict application of the *Règles* and use of the name *Pagurus* Fabricius for genus “A”) corresponds with the practice of all specialists in America and in the U.S.S.R. and with that also of specialists in Australia and Hawaii, together with a few specialists in Western Europe. “Solution II” corresponds with the practice of almost all carcinologists in France, Great Britain, Germany and Scandinavia and also with that of specialists in the Union of South Africa, Japan and New Zealand. “Solution III”, which is supported by Dr. Th. Monod (France), represents an attempt to overcome the difficulties presented by the use of the name *Pagurus* in some parts of the world for genus “A” and in other parts of the world for genus “B”.

. . . . .

**8. Form of presentation now adopted :** In the application submitted in this case full particulars were given of the action which it would be necessary for the Commission to take if it were to decide in favour of “Solution I” (paragraph 26 prepared by Dr. Holthuis) or of

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<sup>6</sup> For the passage in question see page 222 of the present *Opinion*.

“Solution III” (paragraph 21 prepared by M. Forest). At the same time a general indication of the action which would be needed to give effect to “Solution II” was given in paragraphs 7 and 9 of the application but the action which would be specifically required to give effect to this “Solution” was not given in as full detail as was given for the two other “Solutions”. I now consider that at the time when this application was submitted, I should have asked the applicants to supply in respect of this “Solution” as full details as those given in respect of the other possible “Solutions”, for I am of the opinion that this information should be before the Commission when considering the present case. I have been in communication on this subject with Dr. Holthuis and M. Forest who fully share my view and in conjunction with them I have now prepared the required statement. Particulars of the matters involved in the preparation of that statement are given in Appendix 1.

**9. A long-overlooked generic name published by Billberg in 1820 :** It is necessary at this point to take note of the existence of a previously overlooked generic name, *Latro* Billberg, 1820 (*Enum. Ins. Mus. Billberg.* : 134), which it has been found enters into the present case. The existence of this name came to light in the course of an investigation of Billberg's *Enumeratio* carried out by myself when in conjunction with Professor Poulson of Copenhagen I was engaged in a study of the problems connected with the Trilobite generic name *Sao* Barrande, 1846, which it had been noted was a junior homonym of a generic name *Sao* Billberg, 1820, introduced in the above work (Poulsen, 1956, *Bull. zool. Nomencl.* **12** : 133, paragraph 8). As used by Billberg, the name *Sao* was applied to a genus of the Order Stomatopoda and, since, as inspection showed, the *Enumeratio* contained a number of other overlooked—or at least totally neglected—names in the Class Crustacea, including certain names in the Order Decapoda, I sent a transcript of the relevant pages of Billberg's *Enumeratio* to Dr. L. B. Holthuis. In communicating to me the results of the investigation which later he undertook in this matter, Dr. Holthuis drew attention to the existence of a name *Latro* which had been introduced in this work for three species of Decapoda, of which the first was *Cancer bernhardus* Linnaeus, 1758. Ancient names of this kind represent a continuous threat to stability in nomenclature until by the selection of an appropriate type species they are discarded in synonymy or, if this is not practicable, until they have been suppressed by the Commission under its Plenary Powers. This particular name has been considered by myself in conjunction with Dr. Holthuis and M. Forest, in connection with the preparation of the present paper and we have come to the conclusion that the best solution of this particular case lies in the selection of *Cancer bernhardus* Linnaeus, 1758, to be the type species of *Latro* Billberg, 1820, for by this means *Latro* Billberg becomes a junior objective synonym of *Pagurus* Fabricius, 1775. This selection has accordingly been made by Dr. Holthuis and M. Forest in a joint letter

dated 1st October 1956, a copy of which is annexed to the present paper as Appendix 2.<sup>7</sup>

**10. Consequential effects on the alternative proposals submitted in the present case of the discovery of the nominal genus "Latro" Billberg, 1820, and of the type-selection made therefor :** In the case of the proposal submitted under the title "Solution I" the only effect of the discovery of the name *Latro* Billberg, 1820, and of the type selection now made for that genus by M. Forest and Dr. Holthuis is that this name, as a junior objective synonym of *Pagurus* Fabricius, 1775, will need to be placed on the *Official Index of Rejected and Invalid Generic Names in Zoology*. In the case of the "Solutions" styled "Solution II" and "Solution III" respectively, the proposal made is that the genus styled "Genus 'A'" in the application, i.e. the genus to which the name *Pagurus* Fabricius, 1775, properly applies, should in future be known by the name *Eupagurus* Brandt, 1851. This proposal is put forward, in the case of "Solution II", because it has been proposed that this name should be made available for "Genus 'A'" by the designation under the Plenary Powers of a type species which would secure the above end, and, in the case of "Solution III", because under that proposal it is recommended that the Commission should use its Plenary Powers to validate the name *Eupagurus* Brandt by suppressing the older name *Pagurus* Fabricius. It is now seen that in each case the Plenary Powers would need to be used also to suppress the name *Latro* Billberg, 1820, which has the same type species as, and has more than thirty years' priority over, the name *Eupagurus* Brandt, 1851. This aspect of the problem is referred to further in the immediately following paragraph.

**11. Certain minor additions required to be made in the applications submitted in the present case :** The discovery of the generic name *Latro* Billberg, 1820 (paragraph 8 above), will (as explained in paragraph 10) involve certain small additions to the proposals submitted both by Dr. Holthuis (in his recommendations in support of "Solution I") and by M. Forest (in his recommendations in support of "Solution III"). It will involve also corresponding additions to the proposals which (as explained in paragraph 8 above) have been drawn up by myself in conjunction with Dr. Holthuis for the purpose of giving effect to the plan outlined in the application submitted in the present case under the title "Solution II" but not there set out in detail. In so far as the proposals styled "Solution II" and "Solution III" respectively involve the use by the Commission of its Plenary Powers, the Public Notice already given of the purposes for which it may be desired to make use of those Powers in the present case covers the action required under the above head, that action being subsidiary to, and forming a necessary part of, the giving-of effect to the purposes

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<sup>7</sup> The letter here referred to has been reproduced in paragraph 15 of the present *Opinion*.

for which Public Notice has been duly given. In addition, it must be noted that the proposals put forward in favour respectively of "Solution I" and of "Solution III" were prepared by different authors, and that that submitted in favour of the last-named "Solution" is not quite so comprehensive as that submitted in favour of "Solution I". Accordingly, in order to comply with the General Directive that in any given case every name involved is to be dealt with in the *Opinion* rendered by the Commission thereon, it will be necessary to make certain minor additions to the proposals submitted in respect of "Solution III" in order to bring those proposals into line with those submitted in favour of "Solution I". Finally, the elaboration (paragraph 8 above) of the proposals needed to give effect to "Solution II" involves the introduction into those proposals of one name which does not appear at present in the proposals submitted in favour of "Solution I" or in those submitted in favour of "Solution III". Particulars of the necessary minor additions discussed above are given in Appendix 3 annexed to the present paper.

**12. A minor correction in relation to the family-group name "DIOGENINAE" Ortmann, 1892 :** For the sake of historical record attention is here drawn to the fact that in the portion of the application submitted in the present case (Part III) in which are set out the views of Dr. L. B. Holthuis a recommendation is submitted (paragraph 26(5)(a)) in favour of the addition of the family-group name DIOGENINAE Ortmann, 1892, to the *Official List of Family-Group Names in Zoology*, while in the introductory portion (Part I) of the paper which M. Forest and Dr. Holthuis joined in preparing there occurs (in paragraph 16) a recommendation that the Commission should use its Plenary Powers to secure that the foregoing family-group name shall not be used in preference to the name DARDANINAE Schmitt, 1926. That this should have occurred is due not to any inconsistency on the part of Dr. Holthuis, being attributable solely to an error on my part as editor of the paper. The proposal that the Commission should direct that precedence should be given to the name DARDANINAE Schmitt over the older name DIOGENINAE Ortmann was put forward by M. Forest at a late stage when the application was already in proof and as the result of inadvertence on my part, which I regret, was inserted in Part I, instead of in Part II of the paper (the portion reserved for the presentation of views held by M. Forest but not by Dr. Holthuis).

**13. Presentation of proposals for giving effect to each of the three "Solutions" propounded in the application submitted in the present case :** Having now determined (paragraph 8 and Appendix 1) the basis of the proposals needed to give effect to the "Solution" styled "Solution II" in the application submitted in the present case and having also brought into line with one another the proposals submitted in the application for giving effect to "Solution I" and "Solution III"



respectively and having reconciled therewith the proposals required for giving effect to "Solution II" (paragraph 11 and Appendix 3), I am able to present for the consideration of the International Commission proposals prepared on a uniform basis for giving effect to each of the foregoing "Solutions". These proposals are accordingly submitted in Appendix 4 (proposals in support of "Solution I"), Appendix 5 (proposals in support of "Solution II") and Appendix 6 (proposals in support of "Solution III") respectively.

**14. Form adopted in preparing the Voting Paper now submitted :**

I have given careful consideration to the question of the most convenient form of Voting Procedure to be adopted in the present case which differs from the great majority of applications submitted in that, instead of being confronted with a straight choice between two opposing alternatives, the Commission is required in the present instance to decide which of three possible courses is to be preferred to the other two. As Secretary, I have come to the conclusion that the best course will be one under which the Voting Paper submitted to the Commission (V.P.(56)39), which is being submitted simultaneously with the present paper, is divided into two Parts, namely :—

**PART 1 :** In this Part each Member of the Commission is asked to indicate which of the three "Solutions" advocated he considers to be the best and desires to see accepted.

**PART 2 :** In this Part each Member of the Commission is asked to indicate which of the remaining "Solutions" he considers superior to the other, that is, to indicate which of the remaining "Solutions" he desires the Commission to adopt in the event of the "Solution" which he himself considers to be the best (and for which he has already voted in Part 1 of the Voting Paper) not securing the approval of the Commission as a whole.

**15. Procedure to be adopted in counting the votes on Voting Paper V.P.(56)39 at the close of the Prescribed Voting Period :** At the close of the Prescribed Voting Period the counting of the votes cast will be conducted in two stages as follows :—

(a) **First Stage :** In this Stage the only votes to be counted will be those recorded in Part 1 of the Voting Paper, i.e. the Votes in which Members of the Commission will each have indicated the "Solution" which he desires to see adopted (i.e. his "First Preference"). If the votes on being so counted show that some one of the three "Solutions" has obtained an absolute majority of the votes cast (i.e. if the votes cast in favour of that "Solution" exceed in number the votes

cast for the two other "Solutions" when added together) the "Solution" so obtaining an absolute majority of the votes cast will be the "Solution" adopted by the Commission as a whole.

- (b) **Second Stage** : As explained above, the "Second Stage" will arise only if the number of votes cast in support of the most highly favoured of the three "Solutions" is less than the combined number of votes cast in support of the two other "Solutions" when those votes are added together. That is to say, the "Second Stage" will arise only if the number of votes cast for the most highly favoured of the three "Solutions" do not constitute an absolute majority of the total votes cast. If for the foregoing reason the "Second Stage" were to arise, the "Solution" which had secured the smallest number of votes in the first part of the contest (i.e. in the voting on Part 1 of the Voting Paper) would be eliminated and the only "Solutions" left in the contest would be those which in the voting on Part 1 of the Voting Paper had received the largest number of votes and the second largest such number respectively. The votes cast in Part 2 of the Voting Paper (i.e. the "Second Preference" votes) in favour of the "Solution" which had been eliminated in the manner described above would then be counted and the "Second Preference" votes so counted would be added to the number of votes cast under Part 1 of the Voting Paper for whichever were the two "Solutions" left in the field after the "Solution" which had obtained the smallest number of votes under that Part had been eliminated.

## APPENDIX 1

**Problems involved in preparing a statement of the detailed action by the International Commission on Zoological Nomenclature which would be required in the event of approval being given to the plan known as "Solution II" (use of the Plenary Powers to designate for "Pagurus" Fabricius, 1775, a type species congeneric with the type species of "Dardanus" Paulson, 1875)**

The main outlines of the action which the International Commission on Zoological Nomenclature would need to take if it were to decide in favour of the solution styled "Solution II" in the application submitted jointly by M. Forest and Dr. L. B. Holthuis are set out in paragraphs 7 and 9 of Part 1 of that application (the Part written jointly by the above applicants). Various other matters require

however to be considered before it is possible to draw up a set of proposals relating to this "Solution" comparable in detail with those submitted in relation to "Solution I" by Dr. Holthuis and in relation to "Solution III" by M. Forest. The questions involved are discussed in the following paragraphs.

2. It will be recalled that the difficulty in the present case arises from the fact that by two large groups of specialists the generic name *Pagurus* Fabricius, 1775, is used in entirely different senses. By one group, of which in the present case Dr. Holthuis is the champion, the above name is used in the manner prescribed by the *Règles*, this genus being correctly treated as having as its type species the nominal species *Cancer bernhardus* Linnaeus, 1758. The genus *Pagurus* Fabricius, so defined, is stiled "Genus 'A'" in the table given in paragraph 7 (*Bull. zool. Nomencl.* 11 : 310) of the application submitted in this case.<sup>8</sup> By the foregoing group of specialists the second of the genera concerned, stiled "Genus 'B'" in the table referred to above, is known by the name *Dardanus* Paulson, 1875, the oldest generic name available for it under the *Règles*. By the second of the two main groups of specialists referred to above, i.e. the group whose practice corresponds with that described in the application as "Solution II", the generic name *Pagurus* Fabricius is used not for Genus "A", the genus to which (as explained above) this name is properly applicable but for genus "B". By this group of specialists Genus "A" is known by the name *Eupagurus* Brandt, 1851 (a name which under the *Règles* is a junior objective synonym of *Pagurus* Fabricius).

3. As pointed out in the application (paragraph 9), the end sought by the advocates of "Solution II" could be attained only by the use by the Commission of its Plenary Powers to designate as the type species of *Pagurus* Fabricius a species consistent with the usage of this group of workers. The nominal species mentioned in the application as a possible candidate was *Pagurus punctulatus* Olivier, 1811. As has been pointed out by Dr. Holthuis (*in litt.*, 20th September 1956) this would not however be a very happy choice, since the above nominal species is currently identified with the older-established nominal species *Cancer megistos* Herbst, 1804 (*Versuch Naturgesch. Krabben Krebse* 3(4) : 23), the specific name *punctulatus* Olivier, 1811, being thus a junior subjective synonym of *megistos* Herbst, 1804. It would be contrary to the settled practice of the Commission—and indeed contrary to common sense—for the Commission to use its Plenary Powers to designate as the type species of a genus a nominal species bearing a specific name currently regarded by specialists in the group concerned as a junior (subjective) synonym of some other specific name. I accordingly agree with Dr. Holthuis that, if the Commission were to decide in favour of "Solution II", the nominal species which should be designated as the type species of *Pagurus* Fabricius ought to be *Cancer megistos* Herbst and not *Pagurus punctulatus* Olivier.

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<sup>8</sup> The table here referred to is reproduced on page 221 of the present *Opinion*.

4. The next point which has to be noted is that, if the Commission were to approve "Solution II", it would be necessary—as in the case also of "Solution I" and "Solution III"—for it to give a ruling that the nominal species *Cancer bernhardus* Linnaeus, 1758, be interpreted by the lectotype selected therefore by Forest & Holthuis in paragraph 13 of the present application.<sup>9</sup> This is necessary because the foregoing nominal species, which at the time of its establishment was indeterminate by reason of being a composite, is the type species not only of *Pagurus* Fabricius but also of *Eupagurus* Brandt, the nominal genus which, as explained above, the advocates of "Solution II" desire to see adopted for the genus styled "Genus 'A'" in the application submitted in this case.

5. The ground having been cleared in the manner explained in the preceding paragraphs, the next step, if "Solution II" were to be approved by the Commission, would be for the generic names *Eupagurus* Brandt and *Pagurus* Fabricius to be placed on the *Official List of Generic Names in Zoology*. Similarly the specific names *bernhardus* Linnaeus, 1758, defined as indicated in paragraph 4 above (the specific name of the type species of *Eupagurus* Brandt) and *megistos* Herbst, 1804, which under the proposal submitted in paragraph 3 above would have been designated by the Commission as the type species of *Pagurus* Fabricius, would need to be placed on the *Official List of Specific Names in Zoology*. It would be necessary also at the same time to place on the first of the foregoing *Official Lists* one other generic name, namely, *Diogenes* Dana, 1851. This name is not directly involved in the suggested Solution ("Solution II") here under immediate consideration, but it is involved in the suggested Solution styled "Solution I" in the application and also in the Solution similarly styled "Solution III". The need for action under this head arises from the General Directive given to the Commission by the Thirteenth International Congress of Zoology, Paris, 1948, that it is to deal comprehensively with all names involved in any case submitted to it for decision. Corresponding action would need to be taken also at the specific-name level. The type species of *Diogenes* Dana is *Pagurus miles* Fabricius, 1787, and, as the specific name *miles* Fabricius is the oldest available name for the taxon concerned, that name would require to be placed on the *Official List of Specific Names in Zoology*. Reference must be made at this point also to the generic name *Dardanus* Paulson, 1875, a name which is involved both in the suggested Solution styled "Solution I" and in that styled "Solution III", in the proposals relating to both of which it is recommended that this name should be placed on the *Official List of Generic Names in Zoology*. In the case however of "Solution II" such a recommendation would be inappropriate, for under that Solution the name *Dardanus* Paulson would become a junior subjective synonym of *Pagurus* Fabricius, as there

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<sup>9</sup> The paragraph containing the above lectotype selection will be found on pages 223-224 of the present *Opinion*.

proposed to be defined under the Plenary Powers. Under the General Directive relating to the completeness of the coverage of *Opinions* to which reference has been made above it would, however, be necessary to give consideration to the question of placing on the *Official List of Specific Names in Zoology* of the specific name of the type species of the genus *Dardanus* Paulson. *Dardanus hellerii* Paulson, 1875, the species concerned, is however, currently identified with the older-established nominal species *Pagurus sanguinolentus* Quoy & Gaimard, 1825. The specific name *hellerii* Paulson, being a junior objective synonym of *sanguinolentus* Quoy & Gaimard, is not eligible for admission to the *Official List*, the name which should be so added being *sanguinolentus* Quoy & Gaimard, its senior subjective synonym.

6. As in the case of the other Solutions suggested in this case, it would be necessary as part of the routine action involved in the event of the acceptance by the Commission of "Solution II" that the following invalid generic names should be placed on the *Official Index of Rejected and Invalid Generic Names in Zoology*:—(i) *Bernhardus* Dana, 1851 ; (ii) *Pagurus* Berthold, 1827.

7. Under "Solution II" the family name for "Genus 'A'" would be EUPAGURIDAE and that for "Genus 'B'" PAGURIDAE. The first of these was first published (as the name for a taxon of subfamily rank) by Ortmann in 1892, the second (in the incorrect form PAGURII) by Latreille in [1802—1803]. It may be noted at this point that, when establishing the nominal family-group taxon PAGURII, Latreille placed in it all the species of PAGURIDAE known to him, including both "Genus 'A'" and "Genus 'B'" (as so styled in the application submitted in the present case, Holthuis, *in litt.*, 20th September 1956). Accordingly, under *Declaration 28* (now in the press<sup>10</sup>), embodying the decision taken by the Commission on Application Z.N.(S.) 1038 by its vote on Voting Paper V.P.(O.M.)(56)15, the name PAGURIDAE (correction of PAGURII) Latreille, [1802—1803], is the valid name for the family-group taxon having *Pagurus* Fabricius as type genus, alike if the Commission were to accept "Solution I" (application of the above generic name to the genus styled "Genus 'A'" in the application) or if it were to accept "Solution II" (application of the above name to the genus styled "Genus 'B'" in the present application). Thus, if "Solution II" were to be adopted by the Commission, it would be necessary to place the following names on the *Official List of Family-Group Names in Zoology*:—EUPAGURINAE Ortmann, 1892 ; PAGURIDAE (correction of PAGURII) Latreille, [1802—1803]. At the same time it would be necessary to place the under-mentioned objectively invalid names on the *Official Index of Rejected and Invalid Family-Group Names in Zoology*: PAGURII Latreille, [1802—1803] (an Invalid

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<sup>10</sup> *Declaration 28* has since been published (1956, *Ops. Decls. int. Comm. zool. Nomencl.* 14 : xi—xxiv).

Original Spelling for PAGURIDAE) ; PAGURISTINEN Boas, 1924 (invalid because a vernacular (German) word and not Latin or Latinised word).

(signed) FRANCIS HEMMING

25th September 1956.

**Postscript :** The discovery of the long-overlooked generic name *Latro* Billberg, 1820, will call for some additions to the proposals outlined above for "Solution II". This discovery affects, however, both the other solutions suggested in the present case. It has been considered therefore that the most convenient course will be to consider as a single problem the changes necessitated by the foregoing discovery in the case of all three of the Solutions which have been suggested in the present case. This is done in paragraphs 2 and 3 of the note in which are discussed various modifications required in the applications submitted in this case which constitutes Appendix 3 to the present paper.

(intl'd) F.H.

12th October 1956.

## APPENDIX 2

**Selection under Rule (g) in Article 30 of the "Règles" of a type species for the nominal genus "Latro" Billberg, 1820 (Class Crustacea, Order Decapoda)**

By J. FOREST

(*Muséum National d'Histoire Naturelle, Paris*)

and

L. B. HOLTHUIS

(*Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands*)

(*letter dated 1st October 1956 to Francis Hemming, Secretary to the International Commission on Zoological Nomenclature*)

[*Note* :—The document which formed this Appendix has been reproduced in paragraph 15 of the present *Opinion*.]

## APPENDIX 3

**Certain minor additions required to be made in the alternative proposals submitted in relation to the name "Pagurus" Fabricius, 1775, as the result either (a) of the discovery of the generic name "Latro" Billberg, 1820, or (b) of the need for securing that the alternative solutions suggested should be uniform in coverage**

The action in regard to "Solution I" desired by Dr. Holthuis and that in regard to "Solution III" desired by M. Forest were set out in detail in the application submitted to the Commission. A corresponding statement of the action needed to give effect to "Solution II", if that course were to be decided upon, has been given in Appendix 1 to the present paper. Each of these sets of proposals has been rendered incomplete by the discovery (see paragraph 9 of the covering paper and also Appendix 2)<sup>11</sup> of the long-forgotten generic name *Latro* Billberg, 1820. In addition, there are certain minor discrepancies between the proposals submitted in regard to "Solution I" and "Solution III" respectively which need to be reconciled before the present case is submitted to the International Commission for decision. These two problems are dealt with separately in the following paragraphs.

**(A) Action called for as the result of the discovery of the generic name "Latro" Billberg, 1820**

2. In Appendix 2<sup>12</sup> to the present paper M. Forest and Dr. Holthuis have selected the nominal species *Cancer bernhardus* Linnaeus, 1758, to be the type species of *Latro* Billberg, 1820. As the result of this action the name *Latro* Billberg, 1820, becomes a junior objective synonym of *Pagurus* Fabricius, 1775. No difficulty would therefore arise, so far as concerns the plan styled "Solution I". If, however, as is proposed in connection with "Solution II", the nominal species *Cancer megistos* Herbst, 1804, were to be designated by the Commission under its Plenary Powers to be the type species of *Pagurus* Fabricius, the oldest available name for the genus as typified by *Cancer bernhardus* Linnaeus, 1758, would, as is now seen, be the unknown name *Latro* Billberg, 1820, and not the name *Eupagurus* Brandt, 1851, the name desired by the supporters of the foregoing Solution. An equally unsatisfactory result would arise if the Commission were to adopt "Solution III" in its present form, for after the suppression of the generic name *Pagurus* Fabricius under the Commission's Plenary Powers, it would not be possible to use the name *Eupagurus* for the

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<sup>11</sup> See Footnote 6.

<sup>12</sup> See Footnote 6.

genus typified by *Cancer bernhardus* Linnaeus, as is advocated by the supporters of "Solution III", for in this case (as in that of "Solution II") that name would fall before the older and objectively identical name *Latro* Billberg.

3. In order to meet the situation created by the unwelcome discovery of the name *Latro* Billberg, the following additions require to be made in the proposals formulated for giving effect to the three Solutions which have been put forward for dealing with the *Pagurus*-problem :—

**(1) Solution I :**

Since *Latro* Billberg is a junior objective synonym of *Pagurus* Fabricius, all that is needed in this case is that the objectively invalid name *Latro* Billberg should be placed on the *Official Index of Rejected and Invalid Generic Names in Zoology*.

**(2) Solution II :**

In order to preserve *Eupagurus* Brandt, 1851, it would be necessary to use the Plenary Powers to suppress for the purposes of the Law of Priority but not for those of the Law of Homonymy the objectively synonymous name *Latro* Billberg, 1820, which has thirty-one years' priority over *Eupagurus* Brandt. The name *Latro* Billberg, so suppressed, would then need to be placed on the *Official Index of Rejected and Invalid Generic Names in Zoology*.

**(3) Solution III :**

The situation as regards "Solution III" is similar to that described above for "Solution II". Thus under this Solution also it would be necessary for the Commission (a) to suppress the generic name *Latro* Billberg for the purpose of preserving *Eupagurus* Brandt and (b), having done so, to place the name *Latro* Billberg on the *Official Index of Rejected and Invalid Generic Names in Zoology*.

**(B) Reconciliation of certain minor discrepancies  
between the proposals submitted on behalf  
of "Solution I" and "Solution  
III" respectively**

4. Additions required in the proposals submitted in respect both of "Solution I" and of "Solution III" : At the time when the detailed proposals were drawn up for "Solution I" and "Solution III"



by Dr. L. B. Holthuis and M. J. Forest respectively, no corresponding statement had been prepared in respect of "Solution II", the features of which were described only in broad outline in the application submitted. Now that such proposals have been prepared (Appendix 1 of the present paper) it is found that with one exception all the names which appear in the recommendations so submitted appear also in the proposals submitted in respect of "Solutions I" and "III". The one name which appears in the proposal prepared in respect of "Solution II" but not in those prepared in respect of the two other possible solutions is the specific name *megistos* Herbst, 1804, as published in the combination *Cancer megistos*, which is the specific name of the nominal species which the advocates of "Solution II" recommend should be designated by the Commission under its Plenary Powers to be the type species of *Pagurus* Fabricius, 1775. The purpose of this proposal is to make that name the oldest available name for the genus styled "Genus 'B'" in the application submitted instead of, as at present, the oldest available name for the genus there styled "Genus 'A'" (i.e. the genus typified by *Cancer bernhardus* Linnaeus, 1758). Under a General Directive issued to it in 1948 by the Thirteenth International Congress of Zoology the Commission is under an obligation to deal comprehensively with all the names involved in any given application. Accordingly, it is necessary to bring the proposals submitted in respect of "Solutions I" and "III" into line with those submitted in respect of "Solution II" by inserting in each of those proposals a recommendation that the specific name *megistos* Herbst, 1804, as published in the combination *Cancer megistos*, being the oldest available name for the taxon concerned, be placed on the *Official List of Specific Names in Zoology*.

**5. Additions required in the proposals submitted in respect of "Solution III":** It is part of the proposals submitted in respect of "Solution III" that, subject to certain endorsements the family-group name *DIOGENINAE* Ortmann, 1892, should be placed on the *Official List of Family-Group Names in Zoology* but by an oversight the recommendations submitted in respect of "Solution III" did not include corresponding proposals (a) for the addition to the *Official List of Generic Names in Zoology* of the generic name *Diogenes* Dana, 1851, the name of the type genus of the foregoing family-group taxon, or (b) for the addition to the *Official List of Specific Names in Zoology* of the specific name *miles* Fabricius, 1787, as published in the combination *Pagurus miles*, the specific name of the type species of *Diogenes* Dana. M. Forest, with whom I have been in correspondence, has asked (*in litt.*, 29th September 1956) that recommendations in respect of the above names be added to his proposals in respect of "Solution III". There is also one other minor discrepancy between the proposals submitted in respect of "Solution III" and those submitted in respect of "Solution I" which should at the same time be made good. This is concerned with two invalid family-group names which are recommended for addition to the *Official Index of Rejected and Invalid*

*Family-Group Names in Zoology* in the proposals submitted in respect of "Solution I" but for which no corresponding recommendations were included in the proposals submitted in respect of "Solution III". The names concerned are: (1) PAGURII Latreille, [1802—1803] (an Invalid Original Spelling for PAGURIDAE); (2) PAGURISTINEN Boas, 1924 (invalid because a vernacular (German) word and not a Latin or Latinised word).

6. The position of the family-group name "DARDANINAE" Schmitt, 1926, dealt with in the proposals submitted in respect of "Solution III" but not in those submitted in respect of "Solutions I" and "II": The proposals submitted in respect both of "Solution I" and of "Solution III" include a recommendation that the generic name *Dardanus* Paulson, 1875, should be accepted as the name for the genus styled "Genus 'B'" in the application submitted. The genus so named is the type genus of the nominal family-group taxon DARDANINAE Schmitt, 1926. There is, however, an allied nominal genus, *Diogenes* Dana, 1851 (the name of which is recommended in the proposals submitted in respect of both the Solutions referred to above for addition to the *Official List of Generic Names in Zoology*), which is the type genus of an older-established nominal family-group taxon DIOGENINAE Ortman, 1892. The genera *Dardanus* Paulson, 1875, and *Diogenes* Dana, 1851, are commonly placed in the same family-group taxon. The valid name for that taxon when recognised, is, under the *Règles*, DIOGENINAE Ortman, that name having priority over its subjective synonym DARDANINAE Schmitt. In drawing up his proposals in respect of "Solution I", Dr. Holthuis saw no reason for seeking from the Commission any variation from the normal provisions of the *Règles* in this matter and he accordingly recommended that the name DIOGENINAE Ortman be placed on the *Official List of Family-Group Names in Zoology*. Since, in his view, the family-group name DARDANINAE Schmitt, 1926, was no more than an unwanted junior subjective synonym of DIOGENINAE Ortman, 1892, Dr. Holthuis did not include any recommendation regarding it in his proposals in respect of "Solution I". M. Forest, on the other hand, took the view that it was desirable to secure that the name DARDANINAE Schmitt should be the valid family-group name for the genus *Dardanus* Paulson. To this end he recommended that the Commission, acting under its Plenary Powers, should direct that the older family-group name DIOGENINAE Ortman was not to be used in preference to the name DARDANINAE Schmitt by workers who considered that the genera *Diogenes* Dana and *Dardanus* Paulson were referable to the same family-group taxon. As a corollary to this proposal M. Forest recommended that both the family-group names discussed above should be placed on the *Official List of Family-Group Names in Zoology*, but that the entry in respect of DIOGENINAE Ortman, 1892, should be endorsed as indicated above and that an endorsement giving precedence over that name be added to the entry relating to the name DARDANINAE Schmitt, 1926. The

foregoing proposals were devised solely to secure the use of the name DARDANINAE Schmitt in preference to the name DIOGENINAE Ortmann without actually going so far as suppressing the last-mentioned name under the Plenary Powers. Since, as appears, it is extremely unlikely that any specialist would recognise simultaneously both the family-group taxon DIOGENINAE Ortmann and the family-group taxon DARDANINAE Schmitt, there does not seem to be any need to include in the proposals relating to "Solutions I" and "II" a proposal that the name DARDANINAE Schmitt be placed on the *Official List*, the recommendation to this end having been included in the proposals submitted in connection with "Solution III" solely for the purpose of supplying a mechanism for securing that the foregoing name should be given precedence over the older name DIOGENINAE Ortmann.

(signed) FRANCIS HEMMING

12th October 1956.

#### APPENDIX 4

##### Solution I (The Holthuis Plan)

**Solution involving the strict application of the normal provisions of the "Règles" (solution corresponding with the practice of all specialists in America and in the U.S.S.R., and also of specialists in Australia and Hawaii and a few specialists in Western Europe)**

- (1) Issue of a Ruling that the nominal species *Cancer bernhardus* Linnaeus, 1758, be interpreted by the lectotype selected by Forest & Holthuis in paragraph 13 of the present application,<sup>13</sup> namely the specimen figured by Swammerdam in 1737 as fig. 1 on pl. XI of that author's *Bybel der Natuure*.
- (2) Addition of the following names to the *Official List of Generic Names in Zoology* :—
  - (a) *Pagurus* Fabricius, 1775 (gender : masculine) (type species, by subsequent selection by Latreille (1810) : *Cancer bernhardus* Linnaeus, 1758) [name for genus "A"] ;
  - (b) *Dardanus* Paulson, 1875 (gender : masculine) (type species, by monotypy : *Dardanus hellerii* Paulson, 1875) [name for genus "B"] ;

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<sup>13</sup> See Footnote 9.

- (c) *Diogenes* Dana, 1851 (gender : masculine) (type species, by subsequent selection by Dana (1852) *Pagurus miles* Fabricius, 1787).
- (3) Addition of the following names to the *Official List of Specific Names in Zoology* :—
- (a) *bernhardus* Linnaeus, 1758, as published in the combination *Cancer bernhardus* and as defined by the lectotype specified in (1) above (specific name of type species of *Pagurus* Fabricius, 1775) ;
- (b) *miles* Fabricius, 1787, as published in the combination *Pagurus miles* (specific name of type species of *Diogenes* Dana, 1851) ;
- (c) *sanguinolentus* Quoy & Gaimard, 1825, as published in the combination *Pagurus sanguinolentus* ;
- (d) *megistos* Herbst, 1804, as published in the combination *Cancer megistos*.
- (4) Addition of the following names to the *Official Index of Rejected and Invalid Generic Names in Zoology* :—
- (a) *Eupagurus* Brandt, 1851 (a junior objective synonym of *Pagurus* Fabricius, 1775) ;
- (b) *Bernhardus* Dana, 1851 (a junior objective synonym of *Pagurus* Fabricius, 1775) ;
- (c) *Pagurus* Berthold, 1827 (a *nomen nudum*) ;
- (d) *Latro* Billberg, 1820 (a junior objective synonym of *Pagurus* Fabricius, 1775, through the selection by Forest (J.) & Holthuis (L.B.) of *Cancer bernhardus* Linnaeus, 1758, as type species in Appendix 2<sup>14</sup> of the present paper).
- (5) Addition of the following names to the *Official List of Family-Group Names in Zoology* :—
- (a) PAGURIDAE (correction by Samouelle, 1819, of PAGURII) Latreille, [1802—1803] (type genus : *Pagurus* Fabricius, 1775) [family-group name for genus "A"] ;
- (b) DIOGENINAE Ortmann, 1892 (type genus : *Diogenes* Dana, 1851) [family-group name for genus "B"] ;

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<sup>14</sup> See Footnote 6.

- (6) Addition of the following names to the *Official Index of Rejected and Invalid Family-Group Names in Zoology* :—
- (a) EUPAGURINAE Ortmann, 1892 (type genus : *Eupagurus* Brandt, 1851) (invalid because the type genus has as its type species the same species as that which is the type species of *Pagurus* Fabricius, 1775, the type genus of the older family-group taxon PAGURIDAE (correction of PAGURII) Latreille, [1802—1803]) ;
  - (b) PAGURII Latreille, [1802—1803] (type genus : *Pagurus* Fabricius, 1775) (an Invalid Original Spelling for PAGURIDAE) ;
  - (c) PAGURISTINEN Boas, 1924 (type genus : *Paguristes* Dana, 1851) (invalid because a vernacular (German) word and not a Latin or Latinised word).

## APPENDIX 5

### Solution II

(discussed but not recommended in the Forest/Holthuis application)

**Solution involving the use of the Plenary Powers for the purpose of designating a type species for “*Pagurus*” Fabricius, 1775 (solution corresponding with the practice of practically all carcinologists in France, Great Britain, Germany and Scandinavia and also of specialists in South Africa, India, Japan and New Zealand)**

(1) Use of the Plenary Powers :—

- (a) to set aside all type selections for the genus *Pagurus* Fabricius, 1775, made prior to the action now proposed to be taken ;
- (b) to designate *Cancer megistos* Herbst, 1804, to be the type species of the foregoing genus ;
- (c) to suppress the generic name *Latro* Billberg, 1820, for the purposes of the Law of Priority but not for those of the Law of Homonymy.

(2) Issue of a Ruling that the nominal species *Cancer bernhardus* Linnaeus, 1758, be interpreted by the lectotype selected by Forest & Holthuis in paragraph 13 of the present application,<sup>15</sup> namely the specimen figured by Swammerdam in 1737 as fig. 1 on pl. XI of that author's *Bybel der Natuure*.

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<sup>15</sup> See Footnote 9.

- (3) Addition of the following names to the *Official List of Generic Names in Zoology* :
- (a) *Eupagurus* Brandt, 1851 (30th September) gender: masculine) (type species, by selection by Stimpson (1858) : *Cancer bernhardus* Linnaeus, 1758) [name for genus "A"] ;
  - (b) *Pagurus* Fabricius, 1775 (gender : masculine) (type species by designation under the Plenary Powers under (1)(b) above : *Cancer megistos* Herbst, 1804) [name for genus "B"] ;
  - (c) *Diogenes* Dana, 1851 (gender : masculine) (type species by subsequent selection by Dana (1852) : *Pagurus miles* Fabricius, 1787).
- (4) Addition of the following names to the *Official List of Specific Names in Zoology* :
- (a) *bernhardus* Linnaeus, 1758, as published in the combination *Cancer bernhardus*, and as defined by the lectotype specified in (2) above (specific name of type species of *Eupagurus* Brandt, 1851) ;
  - (b) *megistos* Herbst, 1804, as published in the combination *Cancer megistos* (specific name of type species of *Pagurus* Fabricius, 1775) ;
  - (c) *miles* Fabricius, 1787, as published in the combination *Pagurus miles* (specific name of type species of *Diogenes* Dana, 1851) ;
  - (d) *sanguinolentus* Quoy & Gaimard, 1825, as published in the combination *Pagurus sanguinolentus*.
- (5) Addition of the following names to the *Official Index of Rejected and Invalid Generic Names in Zoology* :
- (a) *Bernhardus* Dana, 1851 (November-December) (a junior objective synonym of *Eupagurus* Brandt, 1851) ;
  - (b) *Pagurus* Berthold, 1827 (a *nomen nudum*) ;
  - (c) *Latro* Billberg, 1820, as suppressed under the Plenary Powers in (1)(c) above.

- (6) Addition of the following names to the *Official List of Family-Group Names in Zoology* :—
- (a) EUPAGURINAE Ortmann, 1892 (type genus : *Eupagurus* Brandt, 1851) [name for family containing genus “A”] ;
  - (b) PAGURIDAE (correction of PAGURII) Latreille, [1802—1803] (type genus : *Pagurus* Fabricius, 1775) [name for family containing genus “B”] ;
  - (c) DIOGENINAE Ortmann, 1892 (type genus : *Diogenes* Dana, 1851).
- (7) Addition of the following names to the *Official Index of Rejected and Invalid Family-Group Names in Zoology* :—
- (a) PAGURII Latreille [1802—1803] (an Invalid Original Spelling for PAGURIDAE) ;
  - (b) PAGURISTINEN Boas, 1924 (type genus : *Paguristes* Dana, 1851) (invalid because a vernacular (German) word and not a Latin or Latinised word).

## APPENDIX 6

### Solution III (The Forest Plan)

**Solution involving the suppression, under the Plenary Powers, of the generic names “*Pagurus*” Fabricius, 1775, and the validation of the family-group name “PAGURIDAE” (solution advocated by M. J. Forest and Professor Th. Monod)**

(1) Use of the Plenary Powers :—

- (a) to suppress the generic name *Pagurus* Fabricius, 1775 (type species, by selection by Latreille (1810) : *Cancer bernhardus* Linnaeus, 1758) for the purposes of the Law of Priority but not for those of the Law of Homonymy ;
- (b) to validate the family-group name PAGURIDAE (correction of PAGURII) Latreille, [1802—1803] (type genus : *Pagurus* Fabricius, 1775) for use as the name for taxa belonging to the family and higher categories within the family-group of categories, but not for taxa belonging to any category within that group below the category of family ;

- (c) to direct that the family-group name *DIOPENINAE* Ortmann, 1892, is not to be used in preference to the name *DARDANINAE* Schmitt, 1926, by workers who consider that the type genera of these two nominal family-group taxa are referable to the same family-group taxon ;
- (d) to suppress the generic name *Latro* Billberg, 1820, for the purposes of the Law of Priority but not for those of the Law of Homonymy.
- (2) Issue of a Ruling that the nominal species *Cancer bernhardus* Linnaeus, 1758, be interpreted by the lectotype selected by Forest & Holthuis in paragraph 13 of the present application,<sup>16</sup> namely the specimen figured by Swammerdam in 1737 as fig. 1 on pl. XI of that author's *Bybel der Natuure*.
- (3) Addition of the following names to the *Official List of Generic Names in Zoology* :—
- (a) *Eupagurus* Brandt, 1851 (30th September) (gender : masculine) (type species, by selection by Stimpson (1858) : *Cancer bernhardus* Linnaeus, 1758) [name for “ Genus ‘A’ ”];
- (b) *Dardanus* Paulson, 1875 (gender : masculine) (type species, by monotypy : *Dardanus hellerii* Paulson, 1875) [name for “ Genus ‘B’ ”];
- (c) *Diogenes* Dana, 1851 (gender : masculine) (type species by selection by Dana (1852) : *Pagurus miles* Fabricius, 1787).
- (4) Addition of the following to the *Official List of Specific Names in Zoology* :—
- (a) *bernhardus* Linnaeus, 1758, as published in the combination *Cancer bernhardus* and as defined by the lectotype specified in (2) above (specific name of type species of *Eupagurus* Brandt, 1851) ;
- (b) *sanguinolentus* Quoy & Gaimard, 1825, as published, in the combination *Pagurus sanguinolentus*.
- (c) *miles* Fabricius, 1787, as published in the combination *Pagurus miles* (specific name of type species of *Diogenes* Dana, 1851) ;
- (d) *megistos* Herbst, 1804, as published in the combination *Cancer megistos*.

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<sup>16</sup> See Footnote 9.



(5) Addition of the following names to the *Official Index of Rejected and Invalid Generic Names in Zoology* :—

- (a) *Bernhardus* Dana, 1851 (November—December) (a junior objective synonym of *Eupagurus* Brandt, 1851) ;
- (b) *Pagurus* Fabricius, 1775, as suppressed under the Plenary Powers in (1)(a) above ;
- (c) *Pagurus* Berthold, 1827 (a *nomen nudum*) ;
- (d) *Latro* Billberg, 1820, as suppressed under the Plenary Powers in (1)(d) above.

(6) Insertion of the following entries in the *Official List of Family-Group Names in Zoology* :—

- (a) PAGURIDAE (correction of PAGURII) Latreille, [1802—1803] (type genus : *Pagurus* Fabricius, 1775), as the name, under the Plenary Powers in (1)(b) above, for taxa belonging to the family and higher categories within the family-group but not for taxa belonging to any category within that group below the category of family [family name for genus “A”] ;
- (b) EUPAGURINAE Ortmann, 1892 (type genus : *Eupagurus* Brandt, 1851), as the name for taxa belonging to any category within the family-group below the category of family [subfamily name for genus “A”] ;
- (c) DIOGENINAE Ortmann, 1892 (type genus : *Diogenes* Dana, 1851), the entry of this name on the *Official List* to be subject to the following endorsements :—(i) that this name is placed on the *List* for use by those workers who consider on taxonomic grounds that *Diogenes* Dana, 1851, should be placed in a family-group-taxon different from that in which *Dardanus* Paulson, 1875, is placed, and (ii) that, in accordance with the directions given under the Plenary Powers in (1)(c) above, the name DIOGENINAE Ortmann, 1892, is not to be used in preference to the name DARDANINAE Schmitt, 1926, notwithstanding its older date [family-group name for genus “B”, except as provided in (6)(d) below] ;
- (d) DARDANINAE Schmitt, 1926 (type genus : *Dardanus* Paulson, 1875), the entry of this name on the *List* to be subject to the following endorsement :—this name to be given preference, in accordance with the directions given under the Plenary Powers in (1)(c) above, over the name DIOGENINAE Ortmann, 1892, by any worker who may consider on taxonomic grounds that *Dardanus* Paulson, 1875, and *Diogenes* Dana, 1851, are referable to the same

family-group taxon [family-group name for genus "B", except as provided in (6)(c) above].

(7) Insertion of the following entries in the *Official Index of Rejected and Invalid Family-Group Names in Zoology* :—

- (a) EUPAGURIDAE (elevation of EUPAGURINAE) Ortmann, 1892 (type genus : *Eupagurus* Brandt, 1851), as the name for taxa belonging to the family and higher categories within the family-group (invalid because for taxa of the foregoing ranks a junior objective synonym of PAGURIDAE (correction of PAGURII) Latreille, [1802—1803]) ;
- (b) PAGURINAE (correction at subfamily level of PAGURII) Latreille, [1802—1803], as the name for taxa of all categories within the family-group below the category of family (invalid because, under *Declaration 20*, suppressed automatically as the name for such taxa consequent upon the suppression under the Plenary Powers of the generic name *Pagurus* Fabricius, 1775) the name of the type genus) ;
- (c) PAGURII Latreille, [1802—1803] (an Invalid Original Spelling for PAGURIDAE) ;
- (d) PAGURISTINEN Boas, 1924 (invalid because a vernacular (German) word and not a Latin or Latinised word).

### III. THE DECISION TAKEN BY THE INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

**19. Issue of Voting Paper V.P.(56)39 :** On 23rd October 1956 a Voting Paper (V.P.(56)39) was issued to the Members of the Commission for the purpose of obtaining a decision on the *Pagurus* problem. This Voting Paper was divided into two Parts as follows :—

#### PART 1

In this Part each Member of the Commission was invited "having considered the three Solutions suggested in the present

case, as set out in the application by J. Forest and L. B. Holthuis published in the *Bulletin of Zoological Nomenclature* (*Bull. zool. Nomencl.* **11** : 307—321) and the further material in regard thereto set out in the paper numbered Z.N.(S.) 859 submitted by the Secretary simultaneously with the present Voting Paper” [i.e. in the paper reproduced in paragraph 18 of the present *Opinion*] to vote for whichever of the following solutions he considered the most appropriate :—

- “ (a) *Solution I*, as set out in Appendix 4 of the paper by the Secretary referred to above (Solution under which the normal provisions of the *Règles* would be applied in the present case) (Solution recommended by L. B. Holthuis) ;
- “ (b) *Solution II*, as set out in Appendix 5 of the paper referred to above (Solution under which the Plenary Powers would be used to designate for the genus *Pagurus* Fabricius, 1775, a species other than that which is the type species under the *Règles* for the purpose of validating the current practice of a considerable body of workers) (Solution discussed in the application submitted but not recommended either by Forest or Holthuis) ;
- “ (c) *Solution III*, as set out in Appendix 6 of the paper referred to above (Solution under which the generic name *Pagurus* Fabricius would be suppressed under the Plenary Powers on the ground that its utility has been compromised by discordant usage among specialists in this group) (Solution recommended by Forest).”

## PART 2

Part 2 of the Voting Paper was designed to deal with the situation which would arise if in the case of the Solution which under Part 1 received the largest number of votes the number of votes cast in favour of that Solution were to be less than the total number of votes cast in favour of the two other Solutions, when added together. To provide against this contingency, each Member of the Commission was invited in Part 2 to record a vote as his “ Second Preference ” in favour of whichever of the Solutions that he had not voted for in Part 1 appeared to him to be the more appropriate.

**20. Note annexed to Voting Paper V.P.(56)39 as to the procedure laid down for counting the votes cast on that Voting Paper :** The following note as to the procedure to be followed in the counting of votes cast on Voting Paper V.P.(56)39 was annexed to that Voting Paper :—

*Note on the Procedure which will be followed  
in counting the Votes cast on the present  
Voting Paper*

- (1) If in Part 1 the number of votes cast in favour of any one of the Solutions concerned exceeds the number of votes cast for the two other Solutions, when added together, the Solution thus obtaining an absolute majority of the total votes cast will be declared to be the Solution approved and adopted by the Commission as a whole.
- (2) If in Part 1 the number of votes cast in favour of the Solution which receives the largest number of votes is less than the combined total of the votes cast in favour of the two other Solutions, the following procedure will be adopted :—
  - (a) The Solution for which the smallest number of votes was cast in Vote 1 will be eliminated from the contest.
  - (b) The “ Second Preference ” votes cast under Part 2 of the Voting Paper by those Commissioners who in Part 1 had voted in favour of the Solution which has been eliminated from the contest under the provisions of (a) above will be distributed between the two Solutions which at that stage alone remain in the contest and whichever of those Solutions receive the larger number of Votes after the “ Second Preference ” votes have been taken into account in the manner described above will be declared to be the Solution approved and adopted by the Commission as a whole.

**21. The Prescribed Voting Period :** As Voting Paper V.P.(56)39 was issued under the Three-Month Rule, the Prescribed Voting Period closed on 23rd January 1957.

**22. Particulars of the Voting on Voting Paper V.P.(56)39 :** At the close of the Prescribed Voting Period, the state of the Voting on Part 1 of Voting Paper V.P.(56)39 was as follows, the order

in which the names of Commissioners are recorded being that in which their Votes were received :—

(a) *In favour of Solution I (as set out in Appendix 4 to the paper Z.N.(S.) 859 submitted by the Secretary on 23rd October 1956) (twenty-two (22) votes) :*

Riley ; Boschma ; Mayr ; Prantl ; Esaki ; Jaczewski ; Tortonese ; Key ; Vokes ; Bonnet ; Dymond ; Bodenheimer ; Mertens ; Holthuis ; Bradley (J.C.) ; Miller ; Hemming ; Kühnelt ; Sylvester-Bradley ; do Amaral ; Cabrera ; Stoll ;

(b) *In favour of Solution II (as set out in Appendix 5 to the paper referred to in (a) above (one (1) vote) :*

Hering ;

(c) *In favour of Solution III (as set out in Appendix 6 to the paper referred to in (a) above) (one (1) vote) :*

Lemche ;

(d) *Prevented from Voting by interruption of postal communications consequent upon political disturbances, one (1) :*

Hankó ;

(e) *Voting Papers not returned :*

None.

**23. Declaration of Result of Vote on Voting Paper V.P.(56)39 :**

On 24th January 1957, Mr. Hemming, Secretary to the International Commission, acting as Returning Officer for the Vote

taken on Voting Paper V.P.(56)39, signed a Certificate that the Votes cast on Part 1 of that Voting Paper were as set out in paragraph 22 above and declaring that, as the total number of votes cast in favour of Solution I (twenty-two votes) exceeded the combined total of the number of votes cast for Solutions II and III (two votes), the proposal submitted in favour of Solution I had been duly adopted and that the decision so taken was the decision of the International Commission in the matter aforesaid.

**24. Preparation of the Ruling given in the present “ Opinion ” :** On 19th February 1957, Mr. Hemming prepared the Ruling given in the present *Opinion* and at the same time signed a Certificate that the terms of that Ruling were in complete accord with those of the proposal approved by the International Commission in its Vote on Voting Paper V.P.(56)39.

**25. Original References :** The following are the original references for the generic and specific names placed on *Official Lists* and *Official Indexes* by the Ruling given in the present *Opinion* :—

*Bernhardus* Dana, 1851, *Proc. Acad. nat. Sci. Philad.* 5(11) : 267

*bernhardus*, *Cancer*, Linnaeus, 1758, *Syst. Nat.* (ed. 10) 1 : 631

*Dardanus* Paulson, 1875, *Issljed. Rakoobr. Krasn. Morja* [Stud. Crust. Red Sea] : 90

*Diogenes* Dana, 1851, *Proc. Acad. nat. Sci. Philad.* 5(11) : 268

*Eupagurus* Brandt, 1851, *Middendorf's Reise Nord u. Ost Sibiriens* 2(Zool. 1) : 105

*Latro* Billberg, 1820, *Enum. Ins. Mus. Billb.* : 134

*megistos*, *Cancer*, Herbst, 1804, *Versuch Naturgesch. Krabben Krebse* 3(4) : 23

*miles*, *Pagurus*, Fabricius, 1787, *Mantissa Ins.* 1 : 327

*Pagurus* Fabricius, 1775, *Syst. Ent.* : 410

*Pagurus* Berthold, 1827, in Latreille, *Nat. Fam. Thierr.* : 255

*sanguinolentus*, *Pagurus*, Quoy & Gaimard, 1825, Freycinet's  
*Voy. autour Monde " Uranie " & " Physicienne "* (Zool.) : 532

26. The following are the references for the selection of type species of genera, the names of which have been placed on the *Official List of Generic Names in Zoology* by the Ruling given in the present *Opinion* :—

For *Pagurus* Fabricius, 1775 : Latreille, 1810, *Consid. gén. Anim. Crust. Arachn. Ins.* : 422

For *Diogenes* Dana, 1851 : Dana, 1852, *Amer. J. Sci. Arts* (2) 13(37) : 122

27. The following is the original reference for the lectotype selection for the nominal species *Cancer bernhardus* Linnaeus, 1758, approved and adopted by the Ruling given in the present *Opinion* :—

Forest (J.) & Holthuis (L.B.), 1955, *Bull. zool. Nomencl.* 11 : 312, paragraph 13

28. The following is the original reference for the selection of a type species for a nominal genus under Rule (g) in Article 30 of the *Règles* made in a paper first published in the present *Opinion* :—

For *Latro* Billberg, 1820 : selection by Forest (J.) & Holthuis (L.B.) in a paper reproduced in paragraph 15 of the present *Opinion*

29. The following are the original references for the family-group names placed on the *Official List* or the *Official Index* of the names of taxa belonging to the family-group by the Ruling given in the present *Opinion* :—

DIOGENINAE Ortmann, 1892, *Zool. Jahrb. Syst.* 6 : 270, 294

EUPAGURINAE Ortmann, 1892, *Zool. Jahrb. Syst.* 6 : 270, 296

PAGURIDAE (correction by Samouelle (1819, *Entom. useful Compendium* : 91) of PAGURII) Latreille, [1802-1803], *Hist. nat. Crust. Ins.* 3 : 29

PAGURII Latreille, [1802-1803] (an Invalid Original Spelling for PAGURIDAE)

PAGURISTINEN Boas, 1924, *Biol. Medd. K. Dansk Vidensk. Selsk., Kbh.* 4(4) : 30

30. The prescribed procedures were duly complied with by the International Commission on Zoological Nomenclature in dealing with the present case, and the present *Opinion* is accordingly hereby rendered in the name of the said International Commission by the under-signed Francis Hemming, Secretary to the International Commission on Zoological Nomenclature, in virtue of all and every the powers conferred upon him in that behalf.

31. The present *Opinion* shall be known as *Opinion* Four Hundred and Seventy-Two (472) of the International Commission on Zoological Nomenclature.

DONE in London, this Nineteenth day of February, Nineteen Hundred and Fifty-Seven.

*Secretary to the International Commission  
on Zoological Nomenclature*

FRANCIS HEMMING